Assessing the State of ICZM in an Island Tourist Destination Applying SESs and Ostrom's Collective Action Principles: A View from Coastal Communities

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ABSTRACT

This thesis aims to investigate the state of integrated coastal zone management (ICZM), which is justified as a strategy for managing coastal resources with respect to increasing pressures from tourism, farming, climate change, urbanization, population growth, etc. In the case of island states, the impact of tourism and second-home development is paramount. The use of coastal areas as commons and ICZM as a governance strategy have been established for a long time; however, the implementation of ICZM has remained a challenge due to the forces of global mass tourism and unsustainable resource use in island states. This study focused on views of the coastal communities in North Cyprus, who are in constant interaction with coastal ecosystems for their livelihood. For the analytical purpose of the study, 251 survey questionnaires were administered to eight communities along with the coastal areas. Data analysis was conducted using descriptive statistical analysis with a post hoc test. Socio-ecological systems (SES) and Ostrom's collective action principles guided the study as the main theoretical frameworks. The study revealed that the ICZM strategy has been neglected and coastal communities are not invited to be involved in any form of ICZM. Furthermore, the study revealed the tourism development has been the major activity of the Anthropocene in coastal areas without a proactive coastal development strategy that is supposed to consider the vulnerability of coastal ecosystems. Practical and theoretical implications are also discussed.

Keywords: ICZM; coastal ecosystems; tourism; community; small island states; North Cyprus.

ÖZ

Bu tez, turizm, çiftçilik, iklim değişikliği, kentleşme, nüfus artışı vb. nedenlerle artan baskılar açısından kıyı kaynaklarını yönetmek için bir strateji olarak gerekçelendirilen entegre kıyı bölgeleri yönetiminin (EKBY) durumunu araştırmayı amaçlamaktadır. ada devletlerinde, turizmin ve ikinci konut geliştirmenin etkisi çok önemlidir. Kıyı alanlarının müşterek alan olarak kullanılması ve EKBY'nin bir yönetişim stratejisi olarak kullanılması uzun süredir oluşturulmuştur; bununla birlikte, küresel kitle turizminin güçleri ve ada devletlerindeki sürdürülemez kaynak kullanımı nedeniyle EKBY'nin uygulanması bir zorluk olmaya devam etmektedir. Bu çalışma, geçimleri için kıyı ekosistemleriyle sürekli etkileşim halinde olan Kuzey Kıbrıs'taki kıyı topluluklarının görüşlerine odaklanmıştır. Çalışmanın analitik amacı için, kıyı alanları ile birlikte sekiz topluluğa 251 anket anketi uygulandı. Veri analizi, bir post hoc test ile tanımlayıcı istatistiksel analiz kullanılarak yapıldı. Sosyo-ekolojik sistemler (SES) ve Ostrom'un kolektif eylem ilkeleri, çalışmaya ana teorik çerçeveler olarak rehberlik etti. Çalışma, EKBY stratejisinin ihmal edildiğini ve kıyı topluluklarının herhangi bir BKAY'a katılmaya davet edilmediğini ortaya koydu. Ayrıca, çalışma, kıyı ekosistemlerinin kırılganlığını dikkate alması beklenen proaktif bir kıyı geliştirme stratejisi olmaksızın, Anthropocene'nin kıyı bölgelerindeki başlıca faaliyetinin turizm gelişimi olduğunu ortaya koymuştur. Pratik ve teorik çıkarımlar da tartışılmaktadır.

Anahtar Kelimeler: EKBY; kıyı ekosistemleri; turizm; toplum; küçük ada devletleri; Kuzey Kıbrıs.

DEDICATION

در اندرون من خسته دل ندانم کیست که من خموشم و او در فغان و در غوغاست

Dedicated to the pure and holy love of Khalil Hosseini

I dedicate this thesis to the pure and holy spirit of the one who taught me love, loyalty, and the value of life, but unfortunately, time did not give him the opportunity for eternal love in this world, and he became heavenly due to an unfortunate event.

However, years later, his precious memories still dominate my heart and mind so that no one could ever overcome my heart during these years. I am sorrowful and feel too much grief about him because of his physical absence in my graduation ceremony and seeing his name on my thesis. Although he is not alive in this superficial world, his memory would be in my mind, soul, and spirit: especially during my research times and studying moments in the library or my room because we had a unique aim.

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LIST OF ABBREVIATIONS

CCA	Carrying Capacity Assessment
COM	Co-Management
CPR	Common Pool Reassures
ELA	Environmental Impact Assessment
EU	European Union
ICZM	Integrate Coastal Zone Management
PM	Particulate Matter
SAF	System Analysis Frame
SEA	Strategic Environmental Assessment
SEE	Social Economical Equity
SESF	Social-Ecological Framework
SESs	Social Ecological Systems

Chapter 1

INTRODUCTION

Coastal ecosystems are one of the most productive yet highly threatened ecosystems in the world (Dahl & Støttrup, 2012; Glaser et al., 2018; He & Silliman, 2019). The world's coastal zones represent some of the most diverse and productive ecological and social systems. About two-thirds of the world's population lives within 100 km (60 miles) of the coast (UN Atlas of the Oceans: Subtopic, n.d.). Gerhartz Abraham et al. (2016, p. 69), high-lighted that 'as a result of a burgeoning population, human activities such as fishing, aquaculture, oil and gas exploitation, tourism, agriculture, coastal development and shipping continue to put considerable pressure on the world's ocean and coastal environment'.

Communities in different coastal regions are at the forefront of coastal environments, which are affected by coastal vulnerability to tourism, climate change, erosion, population growth, and overall development. However, in the case of island states, mass tourism as their economic backbone applies further pressure to limited coastal zones, and surrounding communities. 'In addition to having limited resources, in the island states, the economic and social activities tend to be concentrated in coastal areas and interconnectivity between the economic, environmental, social, cultural and political spheres is highly pervasive' (Nesticò & Maselli, 2020, p. 1).

Since such communities are the first ones impacted by changes in coastal ecosystems because of tourism, it is imperative to explore their views and understand the challenges they face in order to facilitate a possible integration and harmonious interaction between anthropogenic activities and the sustenance of communities. Therefore, plans to support coastal change governance in the context of ICZM and collective action are critical before it is too late (Adger, 2009; Raemaekers & Sowman, 2015).

However, because of the immediate return of benefits from mass tourism, especially 3S (sun, sea, and sand) tourism Honey & Krantz, (2007) which is dependent on coastal areas, the long-standing management and protection of the area have been compromised in various destinations and more so in island states (Alipour et al., 2017; Dodds, 2007; Lazzari et al., 2021; Wright et al., 2019). While mass tourism has been the focus, notwithstanding its measurable negative impacts, alternative tourism, which 'improves local conditions be it environmental, cultural or socio-economic' (Conway & Timms, 2010, p. 331), has been neglected. Furthermore, coastal urbanization has also exacerbated the pressure on coastal ecosystems. Worldwide there are 23 megacities with populations of over 10 million people. Of these, 16 are in the coastal zone (Wright et al., 2019, p. 86). Coastal tourism, as a dominant form of global mass tourism (Arabadzhyan et al., 2021), applies various pressures on coastal zones through accommodation, beach front strip cities, hotels, condominiums, transportation, cruise ships, and various forms of pollutions that are reminiscent of Davenport and Davenport's (2006) previous assertion that tourism is now the largest single economic sector in the World. Impacts of leisure transport and tourism on the coastal environment have considerably increased (and are currently scheduled to continue

increasing) in a non-linear fashion and are extremely difficult to manage or limit (Wright et al., 2019, pp. 94–95).

It is well established that coastal regions are socio-ecological systems (SESs) (Partelow et al., 2018; Solé & Ariza, 2019) that are shaped and structured by the environment, society, and economic development in the context of the Anthropocene; 'the Anthropocene argument is substantiated by the presence of climate change in addition to myriad other attributes of environmental change and degradation on an unprecedented scale' (Spector & Higham, 2019, p. 1). In the meantime, tourism's long-term sustainability depends on the harmonious interaction and balanced utility of SESs where the community's future is at stake. 'SESs as an interdependent and co-evolutionary [process], in which social and ecological domains are linked by ecological knowledge, governance arrangements, and ecosystem services' (Andrachuk & Armitage, 2015, p. 2), cannot be separated from the dynamism of human and habitat. Coastal zone management, which is also known as integrated coastal zone management (ICZM), has been established since the 1960s as part of Agenda 21 to show nations how to manage and protect the coastal zones in a sustainable manner (Sorensen, 2002).

The question is: to what extent do destinations adhere to the principles of ICZM? This study aims to investigate the case of North Cyprus where the coast is the main resource and is highly vulnerable to the impacts of mass tourism among many other threats. For the purpose of this study, we targeted several communities who are in constant interaction with the coastal regions and resources. We assumed that the targeted communities are sources of knowledge concerning ICZM and its implementation. At the same time, they are the main actors in the creation of institutions for collaboration

towards the collective action that is essential for the implementation of ICZM (Ostrom, 2000, 2009).

The impact of tourism development on the immediate communities has been addressed in the literature; however, much of the earlier literature does not incorporate the local social structures, values, and environmental capacities of communities in the context of a larger socio-ecological system. Movono et al. (2018, p. 452) highlighted that 'as a result, only a few tourism studies have explored the intricate connections between people and their environment, and even fewer have questioned how these connections may be affected as a society that adapts to tourism development'. Moreover, with the continuation of human migration towards coastal zones and the growing trend of coastal tourism, sustainability of coastal areas has become a complex and challenging task. Therefore, any strategic undertaking must consider social, economic, institutional, biophysical, and legal dimensions in order to achieve the goals of sustainability (Christie, 2005). Unfortunately, not with, standing the establishment of ICZM over the last several decades, successful strategies have remained a rarity in most of the communities that are dependent on coastal re-sources. We hope this study will provide a new strategic direction for coastal tourism in general and island coastal management in particular in a vigorous and sustainable manner by departing from a myopic view of tourism development (Nordbø et al., 2014).

1.1 Problem Statements

In recent years, the scenario in the coastal zone area in TRNC is characterized by increasing the number of tourists, which are due to extraordinary dependency on the tourism industry and attracted many investors to a dispersed and ineffective manner of raising the consumption the natural resources so, it leads to increased competition for

using common resources and conflict over scarce resources. on the other hand, TRNC also has a deep requirement to keep its natural resources because it has been known as a popular destination in terms of environmental scenery, particularly, 3S tourism, paramount importance to locals and governments.

Therefore, in the context of those ones, there is a need for appropriating processes to provide a policy, governance arrangements, and COM practices also the participation of all stakeholders, communities for coastal areas, and marine life's. According to local opinion, each day added further aggravated the gap between residents and the common pool resources of the coastal line.

Moreover, the country's foundations responsible for ecological administration are under a magnifying glass and analysis for the absence of a public obligation to preservation, ignorance, and the absence of local area cooperation in arranging and the board of naturally important assets. The primary variables for natural issues are dry season, urbanization, and land surrender among numerous others.

North Cyprus, battles to accommodate and adjust the monetary development and ecological quality; tracking down answers to accomplish this point requires cautious preparation, strategy, and certain administrative procedures, for example, COM, which is the underpinning of the ICZM.

The problems that arise in coastal areas (i.e., as commons) due to various manmade and natural threats can seriously undermine the destinations' assets. Given the economic opportunities and natural resources, which they provide, Effective measures

are needed to maintain and restore coastal areas. The answer to Design Coastal Protection and Management is “Coastal Integrated Management”.

1.2 Significance and Originality

This study explored the views of communities as they are in constant interaction with coastal regions and resources, therefore communities are sources of knowledge about ICZM and its implementation, and are also key actors in building institutions for cooperation towards collective action that is necessary for the implementation of ICZM (Ostrom, 2000, 2009).

First of all, the earlier literature doesn’t incorporate the local social structure, values, and environmental capacities of communities in the context of a larger socio-ecological system. Secondly, there are fewer questions about how these connections may be affected by a society that adapts to tourism development. Furthermore, with the continuation of human migration toward coastal zones and the growing trend of coastal tourism, sustainability of coastal areas has become a complex and challenging task.

1.3 Aim of the Study and Research Objective

This study aims to investigate the case of North Cyprus where the coast is the main resource and is highly vulnerable to the impacts of mass tourism among many other threats. For the purpose of this study, we targeted several communities who are in constant interaction with the coastal regions and resources. Knowing that the targeted communities are sources of local knowledge concerning the state of coastal areas and possible existence of coastal governance framework including ICZM and their implementation. At the same time, they are the main actors in the creation of informal institutions for collaboration towards the collective action that is essential for the

implementation of ICZM or similar frameworks (Ostrom, 2000, 2009). The question is: to what extent do destinations adhere to the principles of ICZM? In this context, the research questions are as follows:

- How informed the coastal communities are about the value of ICZM?
- Are there any mechanisms for communities to participate in any form of ICZM?
- Do public sector institutions consider communities' role as the main actors in implementation of ICZM?

1.3 Methodology and Data Analysis

For extension, the outcome quantitative research method has been used. the process of study purposive sampling has been chosen which is within the framework of non-probability sampling.

The study purposive of people chosen from sites, like organizations, and selective people (or regardless of the unit of evaluation) who were in destinations had been decided because of their significance to this study's inquiries and perception during living in those areas. I had been clean approximately the standards and their relevance to the inclusion of coastal network contributors as gadgets of evaluation. Data analysis is based on techniques, data screening, reliability analysis, descriptive and frequency analysis, t-test, and one-way ANOVA, as well as post hoc analysis of Scheffe (Midway et al., 2020) are used to attain a theoretical outcome.

1.4 The Study Designs

The study design is provided in six chapters:

Chapter1. It begins by explaining why coastal areas are important and the reason that any destination has to conserve its valuable coastal lines, what is the association

between the role of coastal communities and, environmental hazards, and the impact that mass tourism has on the coastal zone? The main issues in relation to the coastal areas and their management system in general is discussed. Some key words the definition of this study, explaining what the statement of the problem is, the purpose of this study, the methodology, type of data used for organization and analysis.

Chapter 2. this chapter investigates mass tourism an overview, challenges for a New Position or mass tourism vs alternatives, what are the impacts of tourism on a large scale, explanation of different models of tourism, how developed and switch to alternative tourism, talking about coastal tourism and theoretical and framework of ICZM and those theories, which are, explain the conceptual model, also conceptual framework for long-term investigation of social-ecological systems (SES) and Ostrom's collective action principals as two theories for expanding the study model. Finally, the elements involved in managing coastal resources and environment., these concepts should be an internal and external relationship in two-fold, first for communities and other stakeholder participation and the role of institutions which is needed to have co-management systems, besides the community's participation for conserving and protecting these green treasures in this beautiful island.

Chapter 3. This chapter will explain ICZM, how it can be applied to the coastal area, how it can affect key life and protect their lives, the assessment of MIPA in the TRNC, the relationship between ICZM and co-management, coastal biodiversity, and ICZM How can climate change be prevented and the impact of biodiversity on climate change, the relationship between integrated coastal zone management and the tourism industry. Finally, what are the common resources and their importance in tourism? will be discussed.

Chapter 4. This chapter is focused on TRNC's case. Various profiles of the case are discussed, especially in terms of geography, politics, economics, and the role of tourism, institutions, and environmental challenges. moreover, evaluating knowledge areas in terms of population and geographical situation used in the study, Its environmental institutions what is, study whether co-management is fundamental to the adoption of the ICZM Tool, and the extent to which coastal communities are aware of this powerful tool (ICZM) will be debated.

Chapter 5: Allocated to the methodology and results of the survey, also, info for knowledge assortment by finally analysis the date and what were the author findings.

Chapter 6: this chapter is focused on discussion and conclusion. The theoretical and practical implications are also discussed. This chapter will address the limitations as well as recommendation for future studies.

Finally, the references that have been used for the extended research are sorted out , and some appendices related to the research are included finally.

Chapter 2

LITERATURE REVIEW

2.1 Mass Tourism: an Overview

Coastal regions are transitional regions between the land and sea characterized via way of means of very excessive biodiversity and that they encompass a number of the richest and maximum fragile ecosystems on earth, like mangroves and coral reefs. At the identical time, coasts are beneath Neath very excessive populace stress because of fast urbanization processes. More than 1/2 of today`s international populace stays in coastal regions (inside 60 km from the sea) and this range is at the rise (Yunis,2001).

Mass tourism actually grew after World War II and then as a result of the Industrial Mass tourism in wealthy the countries is responsible for the proliferation of middle-class tourism and democratization with a focus on some well-known international destinations. Revolution, which gave rise to economic growth in Western countries. The coastal area attracts tourists mainly because it is based on a completely unique resource complex on the border of the sea, sun, sand (3S), and this complex has blue water, beaches, beautiful scenery, rich terrestrial and marine biodiversity. Ancestral heritage, healthy food, and suitable infrastructure that Northern Cyprus investors made interested to build more hotels, resort restaurants every year to provide convenience to tourists and support various sports, maritime, fishing, and diving shops, etc. Therefore, this enormous volume of tourists in any destination has an influence on cultural, social, economic, and environmental that the most outstanding impact of the tourism industry

is economic growth through raising revenue, which is tourism as the most attractive activity for government and the investors (both foreigner and domestic investors) to the industry. However, important impact of the tourism industry is on the environment that nowadays researchers concentrated on natural resources and common resources treasure which are endangered of numerous concentrations of traveler who visited in a destination (UNEP,2009).

This study focuses on the relationship between shoreline and marine life, and the increase in the number of tourists based on shoreline communities. Through, enormous volume of tourists in any destination has an influence on cultural, social, economic, and environmental that the most outstanding impact of the tourism industry is economic growth through raising revenue, which is tourism as the most attractive activity for government and the investors to the tourism industry. However, the negative important impact of the tourism industry is on the environment that nowadays researchers concentrated on natural resources and common resources which are threatened human beings' life (UNEP,2009).

To think about coastal lines and marine life, as well as how the coastal community concept may help us achieve sustainable tourism and preserve coastal lines. The best method to manage the consequences of mass tourists in diverse places is to use ICZM, which is being used in many countries as a tool. I focused my efforts on TRNC, attempting to comprehend the numerous shifts in the mindset of local residents from the past to the present, as well as the various alerts that have arisen as a result of the island's growing mass tourism industry (UNEP,2009).

2.2 Challenges for New Position (Mass Tourism vs Alternative Tourism)?

The international position of the tourism industry has been rolled as centered of some international reputations such as economic, social-cultural, and ecological, therefore, subsequences lead to attracting the massive concentration of tourists that overall will affect the high volume of the economic impact of the industry which will raise locally revenue leakage distribution accompanied with other problems. However, these conflicts highly depend on the destination, TRNC as a sea, sand , sun destination, with this amount volume of tourism reflected on alternative tourism approaches, therefore, in this Island should be developed new forms of integrating local population and sustainable tourism (in both natural and human environment) such as Eco-tourism, community tourism, special tourism (in North Cyprus can be said sea turtles conservations area), which here is need to support or create a different philosophy of tourism.

In 2003, Hillali, mentioned that A well-documented study of the products of industrialization and democracy, consumption and globalization, because of strong economic growth in 1950's, mass tourism was emerged in which the pioneer countries were, industrial regions and the urban of Western Europe, North America, Japan concentrated to the issue of international tourists in world (Hillali, 2003).

Dehoorne et al., in 2014 cited that tourism globalization was primarily the result of the continued growth of international tourist flows, initially from the firstborn destinations in Western Europe, Mediterranean Europe and emerging destinations, from the heart. It extends to the surrounding areas and the borders of the world (Dehoorne et al., 2014).

In 1950, the number of two forms of tourism was 25.3 million which in 2014 pulls leisure civilization became a new dimension of international tourists, then raised the number of visitors to 1,133,000,00 (Dumazier, 1962).

Dehoorne et.al., 2008, believed that the traveler industry those days had known as a social phenomenon that led to economic enrichment of industrialized societies and social progress and the cause decrease the working time. Developing technical and low-cost price of flight transportation has been forwarded to being accessible international tourism in the world, also shoreline becomes the top tourist destination, reducing the limitation to aristocratic resorts of some privileged minorities (Veblen 1899).

2.3 Manifestation of Tourism in Large Scale

According to the concept of Dehorn and Teng (2015), 3S tourism will be become gradually replace the large-scale standardized package stand of high-end tourism, find a diversification strategy transformed into all 3S tourism products, and create these new high-end markets. Golf course, yacht marina. The purpose of, exhibition centers, The Mediterranean Basin has been proposed as a coastal mass tourism destination due to its diversity of coastlines, from 20 km in Bosnia and Herzegovina to 1500 km in Greece, 7953 km in Italy, 5790 km in Croatia, 5.191 km in Turkey and 2.580 km in Spain, 1.703 (France) (Bramwell, 2004). However, the number of tourists during that period was high, but the income of the destination was low. For example: 71.4 million tourists arrived in France, with a total income of $40.8 billion, with an average expenditure of $543 per tourists (Bramwell, 2004). However, coastal destinations in Australia, United Kingdom, Italy, United States, Cambodia, and India are less than arrivals. Although small, the economic returns were much higher (Aramberri, 2010).

etc. was to attract budget travelers and more expensive visitors (Brmwell, 2004). Mass tourism can be defined as the number of tourists in places that cause problems such as overconsumption and overpopulation (staying local) in relation to a region or region's population density.

Moreover, mass tourism found its international reputation from the historic center of Venice to the coastal line of the Caribbean, Cancun Punta Cana, in the 1990s which extremely showed density of tourists in a place (Theng et.al., 2015). In addition to corporal conditions, the improvement of tourism in beachfront regions includes community interests, health and safety conditions, political factors including unpredictable crises, exchange rate fluctuations, and traditional models of tourism development. It is connected with the financial qualities (SE)of the hostess environment, Simply, a successful or ineffective marketing-led portrayal of the destination. Unpredictable climatic conditions, algae outbreaks, winds, associated environmental conditions such as forest fires, tsunamis, storms, flood risks, and many other constant features and unforeseen events make tourism development in coastal areas affects.

In general, two recreational activities have resulted in an increase in the volume and amount of tourism that threatens marine life over the past decade, one related to seafood consumption products such as fishing, shellfish and shell collecting, and the other related to tourism industry. Activities such as swimming, diving, boating, surfing, windsurfing, water skiing, bird watching, and scuba diving are referred to as non-consumption activities (UNEP,2009).

3S tourer purpose occurred within the coastal space (sea -sand- sun) has extremely keen about natural resources (climate, landscapes, ecologies) and literary (historical and social legacy, expressions and artworks, customs, and so on). It includes interests which will solely be performed in bound areas and in specific circumstances. Therefore, some areas are particularly appropriate for sure forms of tourer activities, that have become acknowledged on a world scale. Examples embody sailing within the Gulf of United Mexican States, aquatics on the beaches of Australia and Hawaii, or diving within the Red sea (UNEP, 2009).

EEA in 2001, mentioned that developing tourism in coastal areas or in a precise vicinity is associated with different factors:

A. Multiplied personal incomes and more time for entertainment
B. Advancements in transportation systems
C. Improving the network communication and media have led to promoting the communications and recognition of world destinations (EEA, 2001).

In recent decades, the number of visitors has risen to the point where it is putting pressure on coastal areas' environmental and cultural resources, as well as negatively affecting the social, economic, and cultural patterns of tourist sites. Despite the continued development patterns, individuals who manage and invest in tourism are increasingly conscious that the quality of these particularly sensitive habitats is critical to the sustainability of coastal areas (UNEP, 2009).

Besides to physical conditions, coastal development has become a dedicated space for coastal tourism development, and today these vulnerable areas of TRNC are a variety of marketing prioritized for development in this industry due to their depth.

Dependence on industry, which is also a field for competing sectors. But in coastal areas, tourism pressure causes significant harm not only from a tourism perspective, but also due to competition among other stakeholders and communities. Tourism activities will make both the tourism industry and common-pool resources unsustainable. Therefore, proper planning is needed to minimize these conflicts and apply them to tourism and the sustainability of natural resources among other sectors (UNEP, 2009).

Here you need to understand and identify existing and potential consumption. You also need to find reach tools such as the physical nature of the coastal environment, and the assessment of mutual and personal compatibility with the environment, and finally integrated strategies and plans. Both are approaching better social and environmental solutions for sustainable development processes (UNEP, 2009).

Individuals who manage and invest in tourism are increasingly aware that the quality of these highly sensitive habitats is crucial to the sustainability of coastal areas, despite the continuous development patterns. We need proper tools to make decisions so that we can clearly comprehend the challenges of tourism and how to respond to those pressures (UNEP, 2009). Cicin-Sain & Knecht in 1998a expressed that one of the main challenges for coastal managers is to give tourism development an appropriate place within integrated coastal management in order to increase it sustain, sustainability.

Sustainable tourism development and ICZM has been considered as a parallel, complementary, and strongly interconnected processes in terms of principles, goals, and policies of the former are instrumental in the implementation of the latter and vice versa (UNEP, 2009). A variety of tools that ICZM offers allow for a more rational

development of tourism, also in turn makes the ICZM practice more efficient (UNEP, 2009).

In the book (UNEP, 2009) Sustainable coastal tourism mentioned that the SEA, CCA, EIA, Sustainability Indicators, etc., each has been applied at the proper phase of tourism development planning and within a well-defined regulatory and legal framework, are a good guarantee of the sustainability of the tourist activity and its harmonious coexistence with other activities in a well-preserved environment (UNEP, 2009).

2.4 A Study of Different Models of Tourism Development or Switch to Alternative Tourism

The short-term movement of people for whatever reason, be it medical, work, or educational, is called tourism, and when it is necessary to engage in life or work, various activities or entertainment while staying at a destination, all objects, and services. In particular, it should be provided to meet their needs and desires. On the other hand, tourism does not simply mean traveling to a specific destination, but includes all activities performed during the day, such as visits and excursions. Call the movement of inbound or outbound or domestic tourism.

Different tourism practices, along with the practical connection of this type of tourism with the environment and the host society to explore the development of other models of tourism, namely tourism, have responded to the need to create different tourism models. More sustainable and more ethical (Brookfield, 1988; Butler, 1990; Smith & Eadington 1992; Bramwell, 1996; Wall, 1997; Mow forth Munt, 2003). It is to introduce a different type of tourism with a different philosophical approach that

promotes a break with the mass tourism model and encounters with the host population (De Kadt, 1990).

Alternative tourism is associated with many approaches, including ecotourism, agrotourism, social tourism, and ethical tourism. There are many possible alternatives to break away from the dominant model of mass tourism. In addition to economic issues, we need to develop sustainable tourism strategies that provide greater economic benefits to the host country, considering socio-cultural aspects, attitudes towards the environment, and participation of the host community (Duterme, 2007).

Alternative tourism can be called by many different names such as green tourism, sustainable tourism, ecotourism, etc.

Table 2.1: Sustainable tourism, alternative forms according to Buckley (2009)

Name	Significance
Green tourism	An old name associated with ecotourism, but never well defined.
Alternative tourism	A term used in the official tourist literature to denominate an alternative to mass tourism or main tourism; Indeed, it is well to distinguish any form of tourism centered on a small market or any product that may not be distributed or relayed by traditional travel agencies.
Endemic tourism	A name very little used, whose biological vocabulary is meant to designate any type of tourism that would move from one attraction attached to a particular geographic location.
Geotourism	Tourism whose basic attraction is a geological feature, a term rarely used. Appellation taken over by National Geographic. It is close enough to ecotourism, but its meaning is rather blurred.
Responsible tourism	Term little used, certainly from an analogy with "responsible care" from the pharmaceutical industry; mainly tied to social considerations.
Sustainable tourism	Term widely used but poorly defined, it refers to a tourism that is in line with the concerns of sustainable development, a term also very vague and contested, relating more to the main environmental concern of tourism, without being restricted to Ecotourism; adopted in UNWTO, Tour Operators Initiative for Sustainable Tourism.

Source: Buckley, R. 2009

However, Table 2.1 shows there is an empty space, and this is the main goal of this article focusing on coastal areas, coastal tourism, or beach tourism.

2.5 Coastal Tourism or Beach Tourism

Coastal tourism refers to land-based tourism activities including swimming, surfing, sunbathing and other coastal recreation activities taking place on the coast for which the proximity to the sea is a condition also including their respective services. Maritime tourism refers to sea-based activities such as boating, yachting, cruising, nautical sports as well as their land-based services and infrastructures (Ecorys, 2013). Cyprus is a tourist destination located on the Mediterranean Sea, with half an area of 3355 km^2 and almost half of this area (1677.5 km^2) being a coastal area, attracting tourists annually for holiday makers to enjoy these include sea tourism, yachting,

mountaineering, water sports, golf, horse-riding, speleology, trekking, diving, Fishing festivals, and fairs.

Coastal tourism is a process that involves tourists, coastal communities, and the places they visit, particularly the coastal environment, natural and cultural resources. Most coastal tourism takes place along the shore and in the water immediately adjacent to the shoreline. At TRNC, tourists of any purpose travel mainly to the coastal areas during their stay in Northern Cyprus for short-term vacations and long-term stays.

The importance of coastal tourism is controversial in nature. While coastal tourism promotes the development of economic relationships between industrial producers and tourism consumers, this process has proven to be a very powerful force in transforming the natural environment and the coastal communities who are not part of the tourism business member tourism community. Coastal areas are a valuable scarce resource not only for those who engage in and profit of tourism industry, but also for those who own private poverty close the sea and for those seeking employment in the fishing, aquaculture, maritime transport, and nuclear energy sectors. and national defense, among other industries. Congestion and competition in coastal areas for common pool resources determine the nature and solutions of tourism problems. Therefore, the problems and opportunities of coastal tourism are properly discussed as a conflict of 'multi-use' or 'multi-value'.

From an environmental point of view, the development of the tourism industry can damage the ecosystem. This is of course inevitable in the construction of airports, ports, road systems, hotels, resorts, and other facilities, but at the same time, tourism development can threat and endanger marine life and coastal ecosystem’s while

maybe providing fin some destination financial support for the protection of the marine environment.

2.6 Impact of Tourism on Coastal Area

Coastal tourism is known as the most common tourism in the world. Especially on islands like Cyprus. A coastal area is a basin with a rich common pool of resources, and their combination. For example, various activities in coastal areas, and coastal waters have a dual function, improving the tourism industry, and supporting the region of the tourism industry. For communities, foreigners and investors who need more tourists here to build hotels, resorts, restaurants and second homes, these facilities and equipment increase the income (profit) of the beach community). But other benefits go to support infrastructures such as harbors, marina, fishing and diving shops, and other related facilities without any consideration to resources.

The main conflict between the profits of tourism investors for economic purposes as a general and the social-environmental in various issues have to be solved since heavyweight impact of tourism on sensitive areas, damaging the corporeal environment of beaches, producing waste, and fragmentation habitats, and also in terms of losing social-cultural identity and values (UNEP-DTIE, 2009).

Usually, the development of tourism activities in coastal areas is based on a process where any planning or/and management decision is taken mainly on the basis of financial criteria, while the environment is taken into account only in a sense that can be described as “trying to minimize effects given the available budget” (UNEP-DTIE, 2009, pp.2). These coastal processes not only have a long-term adverse effect on resources, but also lead to unsustainable coastal development, impairing the economic

benefits of tourism, as well as coastal tourism activities and organisms. Destroy the foundations of diversity and ecosystem services. Sea and land ((UNEP-DTIE, 2009).

The main challenge of this conflict continues to be the development of coastal tourism patterns that do not minimize the benefits of tourists and locals and the quality of the natural resource base for tourism. Therefore, further attention should be paid to the integration of coastal tourism into strategic development plans to minimize tourism-related issues and ensure both the sustainability of the tourism industry and the coastal resources used by other sectors. there is. When planning tourism development, it is of utmost importance to consider the capabilities of the regional system.

Integrated coastal zone management (ICZM) has recently been recognized by many tourism providers and policymakers as a way toward sustainable coastal tourism development. ICZM is an adaptive multi-sector governance approach aimed at balancing the development, use and protection of the coastal environment. It is based on principles such as a holistic and ecosystem-based approach, good governance, intergenerational and intragenerational solidarity, protection of coastal peculiarities, prevention, and precautionary principles, and the achievement of sustainable tourism objectives. provides context for.

Tourism has been highlighted as one of the most important activities in coastal areas by the ICZM. Several UNEP and other international organizations (EU, EEA, OECD) initiatives have highlighted the need to stimulate the implementation of ICZM pilot measures at the local, national, and regional levels. The ICZM strategy, which is now widely used around the world, provides a comprehensive set of actions linked to its development cycle.

Within the framework of ICZM, tourism is identified as one of the most important activities in coastal areas. Several activities initiated by UNEP and other international organizations (EU, EEA, OECD) highlight the need to encourage the implementation of pilot actions for ICZM at local, national, and regional scales. area. The ICZM approach provides a comprehensive set of actions tied to its development cycle and is today adopted worldwide.

Considering to table 2.2, Here are some global tourist data that demonstrate the need to distinguish between the sheer tourism growth that many nations are seeing in their coastal regions and the planned, political, strategic, and responsible tourism development that the country should strive for. This could pointedly contribute to mitigating its growing undesirable impacts on the coastal environment and society. Table 2.2 International tourist movement on a global scale. International Tourist Arrivals by (sub)region and selected countries and territories of destination.

Table 2.2: International Tourist Arrivals by (sub)region and selected countries and territories of destination

		(1000)			Change (%)			Percentage change* 2021 over 2020					2021 over 2019				
	Series	2018	2019	2020*	19/18	20*/19	Series	YTD	Q1	Jan.	Feb.	Mar.	YTD	Q1	Jan.	Feb.	Mar.
Europe		**715,994**	**746,294**	**235,079**	**4.2**	**-68.5**		**-83.4**	***-83.4***	**-85.2**	**-87.3**	**-71.0**	**-87.0**	***-87.0***	**-84.6**	**-87.0**	**-88.8**
- of which EU-27		**523,835**	**540,666**	**177,938**	**3.2**	**-67.1**		**-85.6**	***-85.6***	**-86.4**	**-89.0**	**-75.6**	**-88.9**	***-88.9***	**-85.9**	**-88.7**	**-91.6**
Northern Europe		***81,035***	***83,740***	***20,686***	***3.3***	***-75.3***		***-91.7***	***-91.7***	***-92.0***	***-92.5***	***-89.7***	***-93.2***	***-93.2***	***-91.5***	***-92.1***	***-95.5***
Denmark	TF	12,749	14,573	..	14.3	..	TCE	-88.5		-88.5			-88.2		-88.2		
Finland	TCE	3,224	3,290	896	2.0	-72.8	TCE	-92.1	-92.1	-93.5	-93.0	-85.7	-93.3	-93.3	-92.9	-93.1	-94.0
Iceland	TF	2,344	2,013	486	-14.1	-75.8	TCE	-97.1	-97.1	-97.9	-98.2	-94.0	-97.8	-97.8	-97.7	-98.5	-97.3
Ireland	TF	10,926	10,951	..	0.2	..	TF*										
Norway	TF	5,688	5,879	..	3.4	..	TCE	-88.3		-85.3	-90.7		-86.6		-83.5	-89.1	
Sweden	TCE	7,440	7,616	..	2.4	..	TCE	-80.3		-80.3			-80.4		-80.4		
United Kingdom	TF	38,664	39,418	..	1.9	..	VF										
Western Europe		***200,164***	***205,367***	***79,050***	***2.6***	***-61.5***		***-89.9***	***-89.9***	***-87.4***	***-94.0***	***-84.9***	***-92.2***	***-92.2***	***-86.8***	***-93.7***	***-95.1***
Austria	TCE	30,816	31,884	15,091	3.5	-52.7	TCE	-97.8	-97.8	-98.5	-98.6	-93.0	-98.2	-98.2	-98.3	-98.4	-97.8
Belgium	TCE	9,119	9,343	2,641	2.5	-71.7	TCE										
France	TF	89,400	..	..	..	..	TCE										
Germany	TCE	38,881	39,563	12,449	1.8	-68.5	TCE	-92.3		-92.3	-92.3		-92.2		-92.2	-92.2	
Liechtenstein	TCE	87	98	59	12.3	-40.2	TCE	-59.1		-63.1	-55.6		-50.2		-56.7	-44.0	
Luxembourg	TCE	1,018	1,041	509	2.3	-51.1	TCE	-56.7		-55.8	-57.7		-56.6		-55.6	-57.5	
Monaco	THS	347	363	..	4.6	..	THS										
Netherlands	TCE	18,781	20,128	7,265	7.2	-63.9	TCE	-92.5		-91.7	-93.3		-92.2		-91.3	-93.1	
Switzerland	TF	11,715	11,818	..	0.9	..	THS	-75.9	-75.9	-84.2	-82.0	-31.7	-82.3	-82.3	-82.7	-82.6	-81.7
Central/Eastern Eur.		***146,185***	***153,255***	***47,674***	***4.8***	***-68.9***		***-77.8***	***-77.8***	***-82.1***	***-79.8***	***-68.0***	***-81.6***	***-81.6***	***-82.6***	***-80.8***	***-81.3***
Armenia	TF	1,652	1,894	375	14.7	-80.2	TF	-71.9	-71.9				-76.3	-76.3			
Azerbaijan	TF	2,605	2,864	..	9.9	..	VF	-77.4	-77.4	-84.0	-82.0	-51.6	-80.8	-80.8	-81.1	-79.2	-81.7
Belarus	TCE	2,142	2,201	..	2.8	..	TCE										
Bulgaria	TF	9,273	9,312	..	0.4	..	VF	-45.9	-45.9	-60.0	-52.6	-8.0	-51.6	-51.6	-56.4	-50.1	-48.2
Czech Republic	TF	14,283	14,651	..	2.6	..	TCE	-96.3	-96.3	-96.9	-97.2	-91.3	-97.2	-97.2	-96.5	-97.2	-97.8
Estonia	TF	3,226	3,336	1,026	3.4	-69.2	TCE	-89.2	-89.2	-91.9	-89.6	-80.7	-90.9	-90.9	-90.8	-88.7	-93.0
Georgia	TF	4,757	5,080	1,089	6.8	-78.6	TF	-84.8	-84.8	-91.9	-86.1	-64.4	-86.8	-86.8	-90.4	-85.5	-84.4
Hungary	TF	17,152	16,937	7,418	-1.3	-56.2	TF										
Kazakhstan	TF	..	..	..	..	..	VF	-84.5	-84.5				-86.7	-86.7			
Kyrgyzstan	VF	6,947	8,508	..	22.5	..	..										
Latvia	TF	1,946	1,935	..	-0.6	..	TCE	-91.2	-91.2	-93.4	-92.0	-83.7	-92.5	-92.5	-92.7	-90.9	-93.6
Lithuania	TF	2,825	2,875	..	1.8	..	TCE	-82.7	-82.7	-88.0	-85.6	-64.3	-86.3	-86.3	-88.1	-84.5	-86.1
Poland	TF	19,622	21,158	8,418	7.8	-60.2	TF										
Rep. Moldova	TCE	160	174	29	8.6	-83.5	TCE	-60.4	-60.4				-76.4	-76.4			
Romania	TCE	2,797	2,684	..	-4.0	..	TCE	-77.2	-77.2	-85.0	-83.1	-27.2	-85.5	-85.5	-86.3	-84.9	-85.3
Russian Federation	VF	24,551	24,592	6,359	0.2	-74.1	VF										
Slovakia	TF	5,453	..	..	..	..	TCE	-95.7	-95.7	-96.8	-96.8	-88.4	-96.3	-96.3	-96.2	-96.6	-96.2
Tajikistan	VF	1,250	..	..	..	..	VF										
Turkmenistan	TF	..	..	..	..	..	TF										
Ukraine	TF	14,207	13,438	3,382	-5.4	-74.8	TF										
Uzbekistan	VF	5,346	6,749	..	26.2	..	VF										
Southern/Medit. Eur.		***288,610***	***303,932***	***87,669***	***5.3***	***-71.2***		***-78.4***	***-78.4***	***-82.8***	***-83.7***	***-53.6***	***-83.7***	***-83.7***	***-81.5***	***-83.2***	***-85.7***
Albania	TF	5,142	5,919	2,521	15.1	-57.4	VF	-10.4	-10.4	-25.7	-30.9	78.6	-26.1	-26.1	-11.5	-21.5	-40.0
Andorra	TF	3,042	3,090	1,872	1.6	-39.4	TF	-81.5	-81.5	-89.9	-82.8	-55.8	-82.8	-82.8	-88.4	-81.1	-78.6
Bosnia & Herzg.	TCE	1,053	1,198	196	13.8	-83.6	TCE	-51.8	-51.8	-69.4	-52.6	9.7	-64.7	-64.7	-61.9	-56.0	-73.1
Croatia	TCE	16,645	17,353	5,545	4.3	-68.0	TCE	-87.5		-86.6	-88.2		-87.3		-86.3	-88.1	
Cyprus	TF	3,939	3,977	632	1.0	-84.1	TF	-92.8	-92.8	-95.5	-95.2	-84.1	-95.0	-95.0	-95.3	-95.2	-94.8
Greece	TF	30,123	31,348	7,217	4.1	-77.0	TF	-85.2	-85.2	-87.9	-87.8	-75.9	-64.4	-64.4	-63.6	-56.4	-70.9
Israel	TF	4,121	4,552	833	10.5	-81.7	TF	-97.7	-97.7	-97.6	-99.2	-91.7	-86.0	-86.0	-85.5	-84.8	-87.2
Italy	TF	61,567	64,513	25,190	4.8	-61.0	TF	-77.8		-79.7	-75.5		-98.4	-98.4	-97.4	-99.2	-98.4
Malta	TF	2,599	2,753	659	5.9	-76.1	TF	-91.0	-91.0	-90.7	-93.7	-86.3	-78.0		-78.9	-77.2	
Montenegro	TCE	2,077	2,510	351	20.8	-86.0	TCE	-65.0		-51.4	-72.8		-92.2	-92.2	-89.2	-92.7	-94.1
North Macedonia	TCE	707	758	118	7.1	-84.4	TCE	-56.1	-56.1	-69.8	-60.2	-1.6	-61.7		-49.2	-69.5	
Portugal	TF	22,800	24,600	..	7.9	..	TCE	-93.1		-90.1	-95.9		-92.5		-89.1	-95.6	
San Marino	THS	84	111	58	32.3	-47.7	TCE	-62.4	-62.4	-83.6	-60.8	225.1	-66.4	-66.4	-74.5	-44.2	-73.9
Serbia	TCE	1,711	1,847	446	8.0	-75.9	TCE	-61.2	-61.2	-75.0	-65.2	-13.4	-66.7	-66.7	-67.8	-60.5	-70.4
Slovenia	TCE	4,425	4,702	1,216	6.3	-74.1	TCE*	-93.3	-93.3	-97.0	-95.0	-70.9	-95.2	-95.2	-96.8	-94.9	-94.1
Spain	TF	82,808	83,509	18,958	0.8	-77.3	TF	-88.6	-88.6	-89.5	-93.6	-75.5	-91.5	-91.5	-89.6	-93.5	-91.3
Turkey	TF	45,768	51,192	15,887	11.9	-69.0	TF*	-53.8	-53.8	-71.4	-68.9	26.8	-64.1	-64.1	-66.9	-67.8	-59.3

Source: World Tourism Organization (UNWTO)

The data in Table 2.2 collected by UNWTO, May 2021, shows the total in Cyprus although due to Covid19 the number of tourists is still decreasing, the statistics show overcrowding on the island.

Here are some graphs which shows the number of tourists arrive in different part of world.

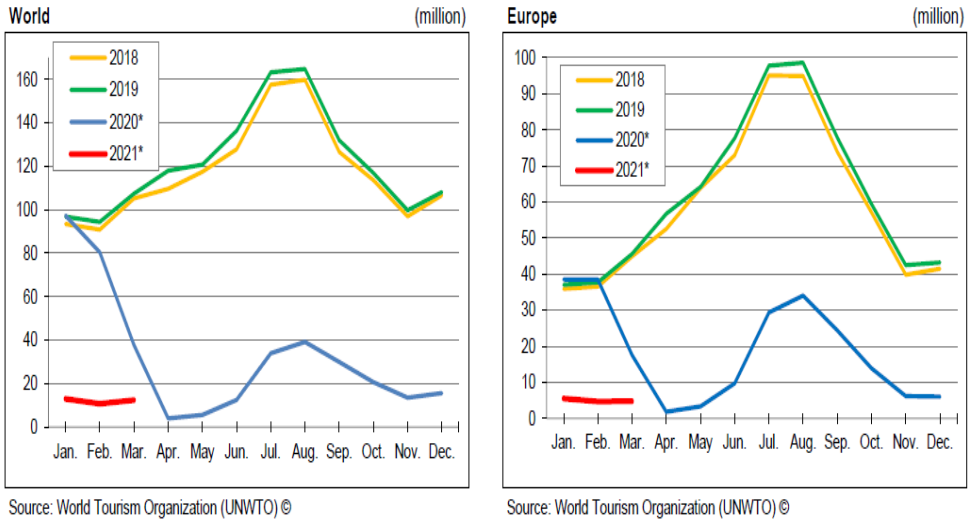

Figure 2.1: International tourism arrival by month (2018-2021)
Source: World Tourism Organization (UNWTO)

However, establishing a synchronous and comprehensive implementation in the tourism sector without community involvement in coastal areas and co-management

impacts will remain a challenge. Within the framework of this research, the main objective of this paper is to study the current status of Integrated Coastal Zone Management (ICZM), which is considered a strategy for managing coastal resources in the face of increasing pressures. increase in water and marine resources, agriculture, climate change due to the development of mass (3S tourism or alternative tourism) in TRNC are the most important issues to consider.

2.7 Conceptualization

The following questions frame the conceptual discourse and rationale that underlies this study:

1. Has ICZM been understood and integrated into the coastal zones in the case of North Cyprus?
2. Has there been any effort to facilitate communities to be involved in any form of ICZM in order to uphold the principles of a bottom-up approach in the protection of the commons?
3. Are the coastal communities considered essential stakeholders, who should be part of collective approach to implementation of ICZM?

There are two distinct but interrelated perspectives that rationalize and support coastal communities' active involvement in the implementation of ICZM for the sustainability and protection of coastal areas as commons. First, protection of the commons is equated with resource management through collective action that legitimizes the active involvement of community members (Burger et al., 2001; Carlsson & Berkes, 2005; Ostrom et al., 2002). Second, collective action is a process in the context of 'collaborative management' or 'co-management', which has been defined as 'the

sharing of power and responsibility between the government and local resource users' (Carlsson & Berkes, 2005, p. 66).

We employed the socio-ecological system (SES) paradigm, as well as Ostrom's (1990) collective action principles to guide our study, which are also conducive for discursive argument regarding the instrumentality of ICZM. It is highly plausible that 'collective action', 'collaboration', and 'co-management' can be conflated and embedded in the SESs, which is generally accepted by scholars in this field (Andrachuk & Armitage, 2015; Ostrom, 2009; Raemaekers & Sowman, 2015; Young et al., 2006). In the meantime, ICZM as an institutional and technocratic practice should promote stewardship and resource efficiency by allowing stakeholders and the community at large to be involved and to have easy access/opportunity to relevant coastal information and education (Gallagher, 2010). For a conceptual model of the study, see Figure 2.1: International tourism arrival by month.

2.8 Socio-Ecological Systems (SESs)

It has been over two decades since Berkes et al. (1998) applied the SES framework to analyze resilience, adaptability, and sustainability in local resource management systems with the aim of bringing local communities to the center stage of the management of common resources (Colding et al., 2019; Young et al., 2006). In other words, there is a need for basic strategies that shift from our contract-based society toward a world order based on 'natural' communities (Bay, 1980, p. 524). Young et al. (2006) rightfully noted that in our globalized world interconnectedness of human and environment embodies SESs, which should guide every aspect of development in order not to compromise the resilience/adaptability of this system with its vulnerability.

Berkes et al. (1998) in their definition of SESs believed that social-ecological systems are linked systems of people and nature, emphasizing that humans must be seen as a part of, not apart from, nature. A comprehensive and inclusive theorization of the SES framework was elaborated by Redman et al. (2004, p. 162), who believe in two fundamental dimensions.

The first, which is better understood, is ecological drivers, such as geologic setting, climate and its variation, patterns of primary productivity, hydrologic processes, and other biogeophysical factors. The second, which brings the communities into the equation, 'is less-studied class of variables includes drivers directly associated with human activities, such as land-use change, the introduction of exotic species, and the use of resources' (Redman et al., 2004, pp. 162–163). In this context, Redman et al. offers a further elaboration of SESs by conflating social variables and ecological factors in a complex system. They note that an SES is:

> (i) A coherent system of biophysical and social factors that regularly interact in a resilient, sustained manner; (ii) a system that is defined at several spatial, temporal, and organizational scales, which may be hierarchically linked; (iii) a set of critical resources (natural, socioeconomic, and cultural) whose flow and use is regulated by a combination of ecological and social systems; and; (v) a perpetually dynamic, complex system with continuous adaptation (Redman et al., 2004, p. 163).

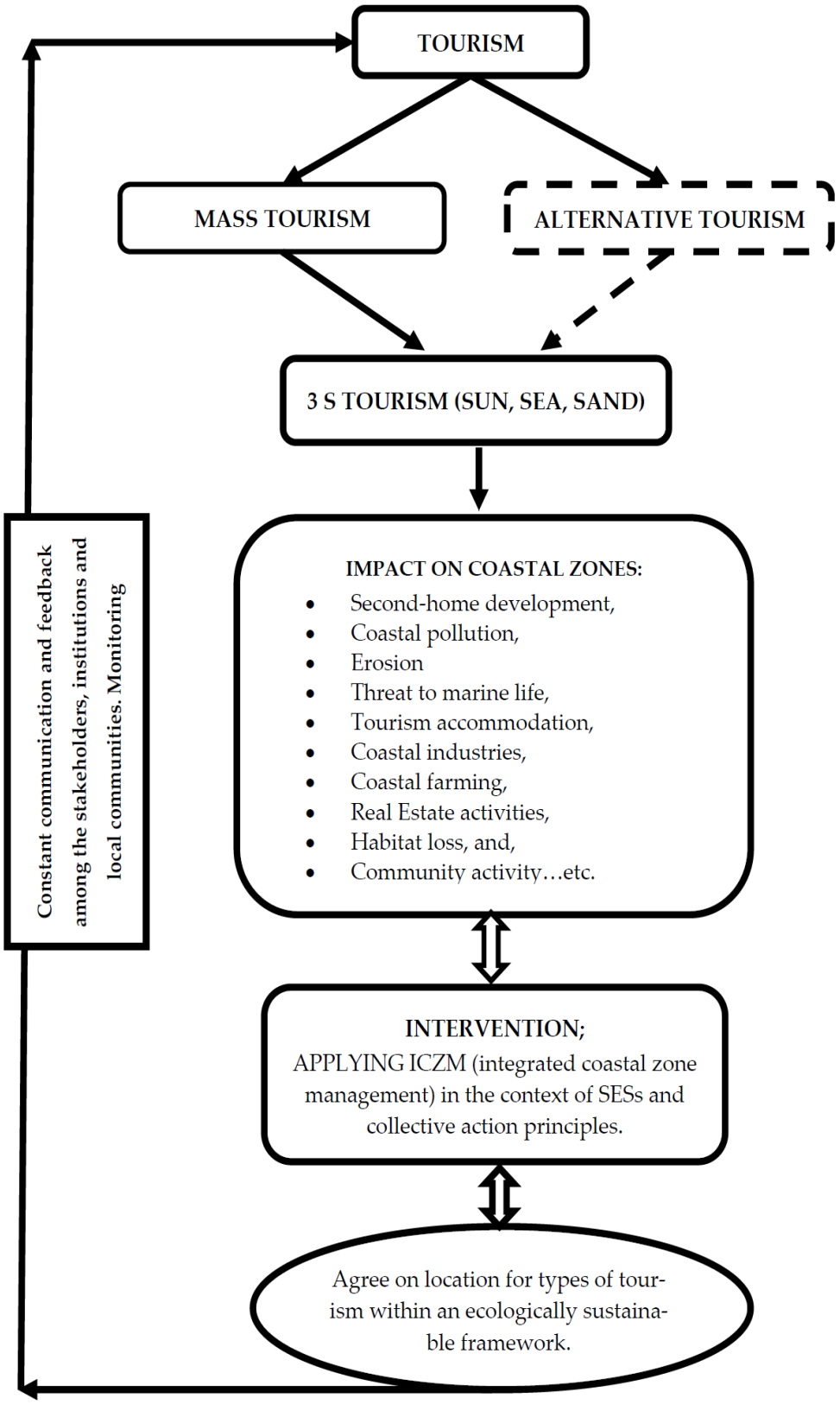

Figure 2.2: Conceptual model of study

It should be underscored that social institutions, social cycles, and social order must be recognized and embedded in strategies by communities in order to confront the challenges of managing common resources (e.g., coastal zones). Social institutions resonate with collective action; social cycles resonate with the allocation of human activity temporally, and social order represents cultural patterns (e.g., social capital) (Ostrom, 1996) and materializes the interaction among community members (Keefer & Knack, 2008; Ostrom, 2009; Partelow et al., 2018; Redman et al., 2004). By integrating ecological components along with the activation of local citizens (i.e., communities) from the very beginning of ICZM, the SES framework will become a catalyst for community members to participate in and take ownership of the planning processes of coastal zones as their own common resources. For integrated SESs, See Figure 2.3.

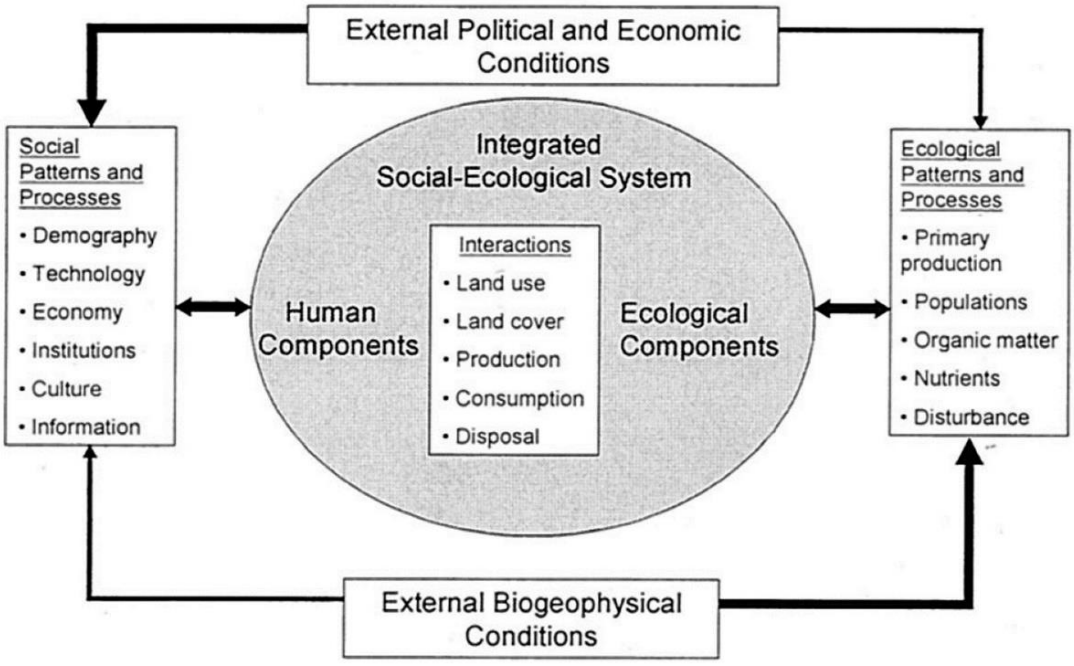

Figure 2.3: Conceptual framework for long-term investigation of social -ecological systems.
Source: Redman et al. (2004, p.164).

Tourism's impact, especially on the environment, has revolved around the negative and positive impacts of tourism on the environment (Chen, 2020; Gladstone et al., 2013). However, in the context of the SES framework, people (i.e., communities) who are settled in coastal areas are involved in the transformation of the physical environment into a landscape that, in the context of environmental psychology, develops into their living environment, place attachment, and place identity (Howard, 2004). Therefore, we argue that the connection between community members and coastal environment transcends the simplistic negative and positive impacts. Chen (2020) went further by adding ecosystem service valuation (ESV) to the conventional environmental impact assessment (EIA), which is in line with the SES framework.

2.9 Ostrom's Collective Action Principles

Ostrom (2009, p. 421) believed 'if the initial set of rules established by the users, or by a government, are not congruent with local conditions, the long-term sustainability may not be achieved'. In the context of SESs, the long-term sustainability of coastal resources depends on approaches that match 'the attributes of the resource system, resource units, and users' (Ostrom, 2009, p. 421). The role of communities in safeguarding the coastal zones cannot take place in vacuum. The capacity enhancement (Few, 2000; Ostrom, 2008; Tipa & Welch, 2006) and empowerment of communities (Berkes, 2004; Ostrom, 1996) are paramount to achieving collective action toward managing common resources.

We employed Ostrom's collective action principles as another theoretical framework for two reasons. First, it is highly conducive to the SES context, which brings together formal and informal institutions, as well as the communities that are affected by and have benefited from common resources management (Berkes, 2007). Second,

Ostrom's (1990) collective action is principles as an evolved version of Olson's theory in 1965 of 'collective action'—enhance our knowledge of the complexity of SESs (Olson, 2012). Nevertheless, Ostrom (1990) 'identified a set of collective action principles that have proved essential for successful collective processes and outcomes in natural resource management. These principles help us to better understand how groups manage common property resources by means of well-established rules, laws, and relational processes for formal and informal institutions' (Saeed et al., 2017, p. 574). In a way, the above statement complements Olson's logic of collective action theory (Olson, 2012).

Furthermore, Cox et al. (2010) conducted an analytical evaluation of over 90 studies of Ostrom's collective action principles and provided empirical evidence that supports their validity and workability in relation to the governance of SESs for the Anthropocene.

Nonetheless, Ostrom's (1990) collective action principles manifest their validity and practicality by bringing the institutional approach to collective action in the context of SESs or coupled human-environment systems (Young et al., 2006). The further manifestation of Ostrom's collective action is reflected in the co-productive activity of the citizens that requires an active role of the government in empowering community members. For instance, there is evidence of successful collective action and positive co-production realized in the case of Brazil in relation to urban services (Ostrom, 1996).

Lastly, Ostrom's collective action principles not only offer an enlightening navigation through SESs; they are also a universal approach to the management of common pool

resources (e.g., coastal zones). As Acheson (2011) ardently argued, Ostrom 'is concerned with managing the natural resources of the world, especially in Third World countries. Many of the systems devised to control these resources are informal and are managed by people at the local level. Ostrom shows that many of these systems can work quite well' (Acheson, 2011, p, 320). Evidence of the workability of her approach has been examined in Nepal, the Philippines, the Los Angeles basin, India, Asia, Africa, Latin America, North America, and Canada (Gari et al., 2017; Moran & Ostrom, 2005; Ostrom, 2008; Tang, 1992). See also Table 2.3.

Table 2.3: Collective action principles as an analytical lens

Principle	Description
Clearly defined boundaries.	Demarcate and define the geographical boundary of coastal zones as common pool resources, including the communities that are in constant interaction with the coast.
Congruence between resource environment (i.e., the coast) and its governance structure and rules.	Governance structure and rules must be specific and clear to the coastal communities, tourism sector, and other investors, especially real estate and second home developers. 'The rules and structures must evolve as the status of the resource and the resource environment change' (Saeed et al., 2017, p. 574) due to climate change, population growth, and ecological priorities.
Decisions via collective choice arrangements.	'All voices matter and should be regarded for a generally satisfactory and accepted decision. Such collective choice arrangement processes should be well known by all stakeholders' (Saeed et al., 2017, p. 574) because 'resilience, vulnerability, and adaptability commonly are used at all spatial and temporal levels in a dynamic structure, whether societal, environmental, or socio ecological. They may refer to capacities of the system as a whole, but also to those of anyone (or more) of its components, even down to the level of the individual actor' (Young et al., 2006, p. 306).
Effective monitoring.	A monitoring system, in the context of ICZM, of the activities of stakeholders, including

Principle	Description
	tourism sector and real estate firms, as well as the behavior of the communities. Involving NGOs, media, and universities in upholding transparency of coastal activities with a feedback mechanism. Instrumentality of ICZM is logical as it aims 'to improve the quality of life of the communities that depend on coastal resources as well as providing for needed development (particularly coastal dependent development-[tourism]) while maintaining the biological diversity and productivity of coastal ecosystems' (Sorensen, 2002, p. 3).

Source: Adopted from Saeed (2017), and Ostrom (1990).

Chapter 3

INTEGRATED COASTAL ZONE MANAGEMENT

3.1 ICZM and Coastal Zone Management

ICZM is defined as 'a multidisciplinary process that unites levels of government and the community, science and management, sectoral and public interests in preparing and implementing a program for the protection and the sustainable development of coastal resources and environments. The overall goal of ICZM is to improve the quality of life of the communities that depend on coastal resources, as well as, provide for needed development (particularly coastal dependent development) while maintaining the biological diversity and productivity of coastal ecosystems in order to achieve and maintain desired functional and/or, quality levels of coastal systems, as well as, to reduce the costs associated with coastal hazards to acceptable levels' (Sorensen, 2002, pp. 3–4). Graph 3.1 shows the relationship between land and sea (sea-land) interactions.

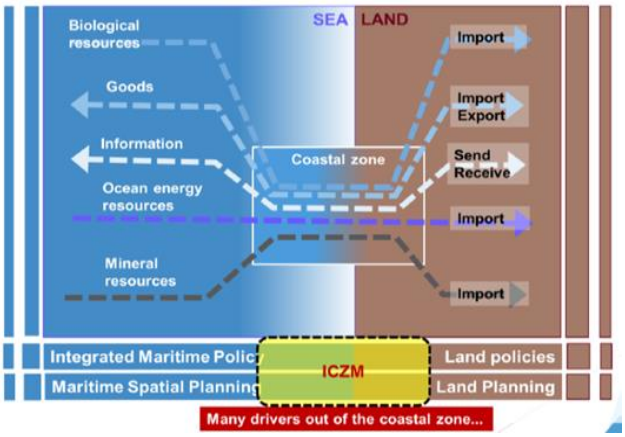

Figure 3.1: Land -sea and sea -Land interactions
Source: European commission 2017

The history and practice of integrated coastal zone management (ICZM) go back to 1965. At the early stages of application of ICZM, its practice was confined to Australia, the United States, and United Nations Environmental program (UNEP). However, by the mid-eighties, it gained validity as a global practice, and rhetorically, it has become a mechanism for sustainable development. Sorensen (2002, p. 2) highlighted that 'in recent years ICZM has become the umbrella term for the various names for the practice, including: coastal zone management, integrated coastal zone management (and/or planning), coastal area management (and/or planning), and integrated coastal resources management (and/or planning)'. Through the evolution of ICZM, its profile and practice embraced the motto of sustainability by perceiving 'value of participation in ensuring accountability, local democracy and stakeholder "buy–in" is now so well entrenched and inclusive participatory coastal management is the prevailing coastal decision-making paradigm in much of the world'(McKenna et al., 2008, p. 942).

Nevertheless, ICZM is not a 'plan' in which "one size fits all". Rather, it should be adaptive to the particularity of socio-ecological systems of the given case. Therefore:

> True adaptive management is one where the environment itself is the intended beneficiary. Its goal is always to improve management in the face of uncertainty by increasing the knowledge base. This knowledge is then fed back into the policy-making process which adapts; accordingly, it is management policy that adapts, not the nuts and bolts of a specific activity or project (McKenna et al., 2008, p. 947).

An adaptive ICZM especially in an island state destination where most of the coastal areas are bearing the characteristics of rurality and small communities needs to avoid the errors of embedding ICZM in their tourism planning system without adapting it to the local people's knowledge and the potential inputs of local communities. For instance, ICZM in the case of North Cyprus should truly understand the specificities

and complexities of coastal communities in the context of SESs. Furthermore, to shield community participation and involvement against the impediments of power relations, which are part of the heterogeneity of the community (Blackstock, 2005; Coffé & Geys, 2006), the collective action principles advocated by Ostrom (1990) are indispensable ingredients for shielding community empowerment from vested interests (Few, 2000; Soriani et al., 2015).

3.1.1 Coastal Zone Management

Nowadays, ICZM has become an international practice to combat the adverse impacts of coastal tourism, mariculture, urban expansion, second-home subdivisions, coastal forestry, agricultural practices in coastal watersheds, dredging and dredge spoil disposal, sewage treatment, and oil and gas exploitation (McKenna et al., 2008, pp. 18–19).

However, in the case of island states where coastal areas are the main tourism resources, ICZM becomes the paramount institutional practice with the formidable agency housed in tourism planning institutions. In this process, ICZM is established as a legal entity and its 'implementation and monitoring alternatives should be explored so that suitable mechanisms can be integrated into the general process' (P. M. Burns, 2004, p. 33). To integrate and uphold the principles of SESs and the collective action approach, an agreement on the goals of ICZM at local, regional, and national levels should be adhered to as the infrastructure of ICZM. See also Figure3.2

I assumed the participation of communities in ICZM not only as a delivery mechanism in itself, but also as an effective mechanism for decision making along with competent authorities. In a complex environment such as coastal zones, ICZM can be a practical and strategic guideline for problem recognition, planning, implementation, community

involvement, social learning, and monitoring, as well as to ameliorate and managing that is associated with such complex processes (Phillips & Jones,i2006).

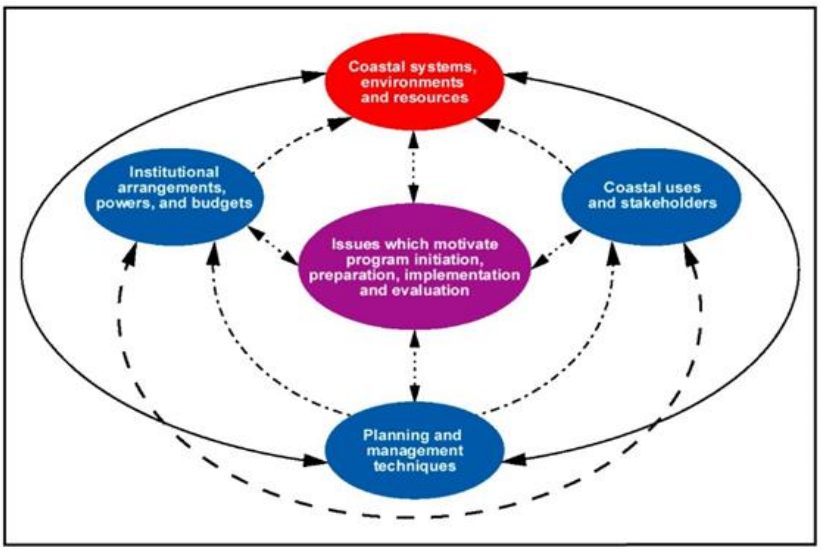

Figure 3.2: Elements involved in managing coastal resources and environment
Source: Sorensen (2002, p. 4).

3.2 Integration Coastal Zone Management (ICZM) and Evaluation of Marine Protected Areas (MPA) in TRNC

As far as coastal Communities depend on Coastal Resources, TRNC is the third largest island in the Mediterranean Sea with beautiful and unique scenery that is suitable for developing coastal tourism. In addition, recently, it seems government policies, along with citizen demands for recreation spaces and accommodation, have caused rapid development of coastal tourism. Therefore, the number of tourists demands more food, and more generated waste products. As Chen and Bau (2016) expressed those the higher demands on seafood and other recreational facilities, generating more waste products rate would be high by increasing the number of visitors (Chen & Bau, 2016).

Also, Logar (2010), believed that driving forces of tourism development on beaches would cause marine pollution, overfishing, and loss of natural coastlines, extremely

affecting coastal environments (Povilanskas et al., (2016)) add that their perceptions by tourists. Wong in 1998 and Mihalic in 2016, argued that achieving a balance between the development of coastal tourism and environmental protection is essential (Wong, 1998; Mihalic, 2016), in light of this true matter, various countries have been recognized Integrated Coastal Zone Management and organization as a cohesive approach that needs to balance across diverse sectors concerning numerous aspects of complex coastal management (Olsen et.al., 1997). Furthermore, numerous international conventions such as the United National Conference on Environment and Development (UNCED, 1992), the Convention on Biological Diversity (CBD, 2002), world summit on Sustainable Development (WSSD) which are confided ICZM can be provided a system thinking approach a holistic view of socioeconomic, natural, and environmental systems by two aims space and encouraged towards sustainable development of coastal (Turner et al., 1997). There should be integration and collaboration among different organizations including various levels of sectors, government, nations land, and water, which are elements of coastal zone, and disciplines (Ioppolo et al., 2013).

In institutional arrangement and powers and budget part, need for co-management strategy which Arefipour (2016) referred to that Co-management and coproduction are acknowledged as innovation and advantageous implementation for institutional arrangements, primarily based on each private and public resources, in addition to fine techniques to promote and aid collective action correlated to the administration of herbal resources. This is especially important when talking about participation management, as it aims to increase the number of stakeholders involved in protecting the environment of resource users. Co-management is also based on public participation based on the assertion that (Arefipour, 2016):

1. Instrumental: powerful aid settles on selections greater authentically and complements results. It expects to reestablish open validity, diffuse clashes, legitimize selections, and factor of confinement destiny problems to utilization by developing proprietorship`. Strategy goals aren't open for discourse; simply the factors of hobby are (to a lesser or greater noteworthy degree). It hereby underpins incumbent interests (As cited in Wesselink et al. 2011, P. 4).
2. Substantive: non-professionals see problems, issues, and answers that professionals miss. It way to extend the expansiveness and profundity of information and alongside those strains decorate the character of choices; it disregards managing issues (e.g., diagnosed with problem encircling). Dissimilar to instrumental reason, technique targets may be modified in a substantial approach of reasoning (As cited in Wesselink et al. 2011, P. 4).
3. Normative: The democratic ideal is of greatest concern. It means resisting the power of the interests of the occupants and allowing everyone to be affected by their choices. (As cited in Wesselink et al. 2011, P. 4).

In North Cyprus during February up to October (seasonal months) shoreline where each year encounters voluminous resources users encompasses domestic community, foreigner communities, and tourists. On the other hand , Cyprus among Europe and the Middle East countries was known as the hotspot area (Myers et al., 2000) in terms of biodiversity since it is the only center of birds (Bibby et al. 1992; Kourtellarides 1998) , mammals (with six out of its 11 wild mammals) (Hadjisterkotis & Masala 1995; Hadjisterkotis 1995, 2003a, Bonhomme 2004; Cucch, 2006), insects endemism (Makris 2003), and also , 1910 taxa flora included species, subspecies , varieties , forms and hybrids as known as native or naturalized . In general, 7.39% taxonomical levels which is one of the highest in Europe. (Hadjichambis & Della ,2007). The main reasons of uniqueness biodiversity in Cyprus are related to its geographical location, be an oceanic island, isolated from nearby to continents for millions of years.

In this Island, the coastal zone included rich wildlife with high ecological value, cover 772km of Cyprus contain by magnitude sea cliffs which are extremely rare, and some rocky (pebble beaches) substrate covered 54%, 46% covered by sandy beaches, and many small coves. The coastal belt of Cyprus although it has limitations to some areas

but encompasses Sand dunes, salt flats, salt lakes and salt marshes, and freshwater marshes. These are cover features of the coastal zone area that are confined to twenty-two sites. (Hadjichambis et al., 2003). Tourism activities have induced erosion over the past 20 years and have changed the shape of beaches (low & narrow), which are now a small supply of sediments due to damming construction.

Mediterranean is located in eastern to western extent of 3,900 km (2,400 mi) with covering an area of 2,509,000 sq km (969,000 sq mi), and 1,600 km (990 mi) maximum, its coastline covers an area totally 648 km (402.6 mi), and it includes the Aegean, Adriatic, Mediterranean, Black, Red, and Caspian seas, with the Persian Gulf in which there are three actual distinct risks to the Mediterranean ecosystem:

A. Mercury (chemical pollutant by industrial factors)

B. Invasive alien species

C. Physical impacts of the changing climate

This study tries to discuss the opportunities and threats that can be suitable to decrease the trouble to the invaluable international marine resource and the coastline as well by implementing or applying ICZM concept.

Figure 3.3: A satellite image showing the Mediterranean Sea.
Source: NASA

Therefore, when Cypriots consider biodiversity conservation and research they should have in mind the unique characteristics of their island, and the need to study and protect not only the habitats and the species which are designated by the European directives, but also the unique Cypriot species, subspecies, varieties, cultivars, and habitats.

In world view, Cyprus appraisal of biodiversity research can be contributed to the sustainable use of biodiversity in Europe. (Available from: accessed Dec 12, 2019). So, coastal is a wealthy and valuable area that is needed to implement strategy and policy to achieve sustain ICZM.

3.3 ICZM and Co-management

Mass tourism activates as an intensely human activity through a varied catalog of activities and anthropic erosion that made modify the balance of the ecosystem. International references refer to wetlands and coastal expanded to high ecological value with remarkable fauna and flora in which cases of environmental catastrophes because of human activities (Misson & at ct., (2016). Viirret, E, and his colleagues in

2019, mentioned that seashore has a significant role in ecosystem services for biodiversity such as food, recycling and removal of dangerous chemicals, climate regulation, culture, landscape, and more. Lee et. al. (in 2018), believed that the natural and geographical conditions are attractive for developing human activities such as tourism, the agriculture industry, and so on. (Lee & et.al., 2018).

Most countries, particularly in economy-dependent countries to tourism industry need to take urgent actions to recover and prevent the catastrophes of the developing tourism in the coastal –maritime territories in the destination country. As some researchers such as Maccarrone and Olsen believe that for achieving sustainable development the coastal areas, integrated coastal management can work as a powerful tool that encompasses effective strategy management dealing with the coastal zones and land areas dilemmas nearby adopting across beneficial for the world coastal zone (Maccarrone et. al. 2014, Olsen 2003).

Reis et al. (2014), stated that a powerful and operationalized technique for a successful and sustainable coastal control that lets scientists and stakeholders to paintings collectively to clear up environmental issues is diagnosed ICZM.

ICZM is a way for an included method to planning and control, in which all guidelines, sectors, and, to the nice possible extent, character pastimes are well-considered, with the right attention given to the whole sort of temporal and spatial scales and regarding all coastal stakeholders in a participative manner. It wishes pinnacle conversation amongst governing authorities (nearby, nearby, and country-wide), and guarantees to address all 3 dimensions of sustainability: social/cultural, financial, and environmental. It hence gives control devices that aren't regular with sea covered or

foreseen withinside the precise rules and directives in such comprehensiveness (Consult, R. (2006)). So, those 3 dimensions of our not unusual place among the principals of the tourism enterprise and ICZM which performs a vital key withinside the definition of Mediterranean nearby techniques so that you can preserve coastal environmental quality.

Increasing the pressures on coastal resources have directly dependent on increasing the number of human activities. The consequences of the uprising the number of tourists is environmental degradation and other related problems such as societal problems (Borja et al., 2010a, 2010b; Halpern et al., 2008; Berger and Hodge, 1998). As Clark in 1995 cited human society development has a deep dependency in focusing the coastal zone encompass the highest biodiversity and the richest living marine resources (Clark, 1995)

The variety of coastal structures is affected directly and circuitously via several human activities focused on the coastal area. In precise, seashore characteristics at visitor websites induce several visitors and make foremost contributions to local economies (Kay & Alder, 2005).

In general, according to interview of Burbridge, P.R. in 2012), he mentioned that integrated coastal management is a set of principles to guide development planning it is meant to create a working environment where people see that there are ways of doing things that are less environmentally damaging more economically responsible and create a greater social benefit and that’s difficult to get people to think about the environment the economy and social aspects in the same sentence and that’s what coastal management is trying to do not trying to purely protect the environment or not

trying to you know maximize economic activities at the cost of social equity these are complex concepts and they have to become too complex, so here there is necessary to have a tool for getting deal with those complexities. There is a need to have a sustainable sociology-ecology system framework (SESF) and sustain tourism that is a core of economic dependency.

Sustainability can be achieved by integrating multiple principal knowledge and frameworks in an understanding contracture of academic information. (Spangenberg 2011, Fischer et al. 2015, Ruppert-Winkel et al. 2015).

The one aims of this article is to find challenges to investigating the opportunities in order to integrate co-management to manage the coastal zoning in TRNC. This paper will be explained briefly the main ICZM activities of tourism in those regions.

Ostrom & et.al (2007) stated that the social-ecological structure's framework is a conceptual framework presenting a list of variables that can be interacting and affect effects in social-ecological structures and she added that for evaluation the SESF structure was supported by the long history of empirical research on the commons, institutions, and collective action. (e.g., Ostrom 1990, Agrawal 2001, Meinzen-Dick et al. 2002, Anderies et al. 2004, Wollenberg et al. 2007, Poteete et al. 2010).

The present study undertakes to measure the side effect of tourism on the environmental landscape such as biodiversity, ecology, or environment and also tries to find the concept of the mutual relationship between those matters that indicates conservation of biodiversity, ecology, or environment is a consequence of human

activities. Therefore, this is an imperative requirement to associate these facets. Co-management is known as a final solution to approach managing coastal zone.

There are three common dimensions of integration SES, Socioeconomic and cultural, and governance between ICZM and tourism dimensions of integration: Nowadays, there is no reasonable balance between them. Because the Island needs to improve its economic dimensions and on the other side tries not to lose its touristic attractions. So the model of this research must define part of its dual benefits in the aspect of any growth should have environmental conservation responsibilities that should be undertaken current and future cooperation between community and government which leads to applying co-management as a powerful path for establishing SES and social learning or social exchanging theory to co-controlling human activities.

3.4 Coastal Biodiversity and ICZM

Seaside's is the most densely polluted region where has direct and indirect impact change on the climate condition related to human industrial activities. Climate change can take into account an accumulative effect on environmental issues (Schindler, D. W. (2001)). Socioecological change is the consequence of climate change. Costal line communities have experience at multiple scales and speeds of SE change (Moore 2016). Lotze &et.al. (2006), mentioned that coastal ecosystems extremely have been affected by climate change, but coastal zone also has been undergoing intensive local impact for centuries. The degradation or collapse of coastal ecosystems has derived from regional activities. The interaction of local human activities and climate change have strong impacts on coastal areas particularly when co-occurrences of them increased. Researchers and scientists recognized some of those interactions for

instance: global warming and getting warm water of the ocean that will change the condition of nutrition of some sea plants such as algae.

In TRNC coastal and sea marine as mentioned before has high range of diversity and productivity in the coastal zone, land marine Mediterranean Sea while coastal region, land are the most polluted places that recent year's scientist confirms that these can be affected on biodiversity.

There exist different concepts of human interaction increase or decrease biodiversity in the coastal areas or coastal zone. Some researchers mentioned that biodiversity of human interaction works such as hurricanes, therefore, increasing biodiversity. Morimoto (2008) expressed that it is easy to understand that place interaction can uprising the biodiversity, on the other hand, there is no scientific evidence on the relationship between biodiversity and place human interaction on the coastal areas (Morimoto, 2008) but in the spit, some scientists believed that those interactions would decrease biodiversity because of many clear examples from the past up to now has shown many disasters were up growing the population and human activities impacts on the coastal zone. Here are some of these examples:

1. In Vietnam: in Southeast Asia, Vietnam coastal is the most polluted region because of multinational companies' substances exploit in both coastal and marine resources which caused serious environmental problems such as erosion, pollution, and depletion of those resources. (Sekhar, 2005)
2. In TRNC: a large part of coastline occupied by touristic infrastructure and facilities that made the Island encounter to a variety of serious problems such as erosion of cement plant, disused chemical plant, however, in recently, majority of sub-urbanization and developing coastal area for tourism industry

> creates land and sea use conflicts. Nowadays, ordinary of accommodation, restaurants found on the coast region, mostly in Limassol, Larnaca (I cannot find any resources which area is the most pollute) Recorded by Ministers of tourism the highest population seashore, during 1997 And 2019. There is a clear example showing the rapid up growing of population in the coastal areas. For example, In Iskeleh area, ….

Developed pressures on those areas through housing and tourism development. Even recently increased road network is burdened with increasing traffic and air pollution. But, unfortunately, at the present time, there is no more information about and other documents of pollution by sustain development of the tourism industry in North Cyprus.

The ecosystem level of the coastal areas often propagate would be affected ecosystem functions and the provision of important ecosystem services by populations and community level on climate change.

Therefore, ecosystem biodiversity would change through human interaction activates on the regional or the main impacts of human activities would threaten to the biodiversity through urban and tourism development, infrastructure, grazing, and rural area abandonment. According to the fourth report of the National Report to the United Nations Convention on Biological Diversity mentioned (2010,2016):

> Coastal habitats have suffered serious destruction and reduction, with the consequence of biodiversity loss. The increase of land demand for tourism development, the land-use changes that led to fragmentation of habitats, as well as habitat loss, placed excessive pressure on biodiversity. Many coastal habitats, such as dune habitats and coastal marshes, have been compromised or destroyed. The construction of dams, overexploitation of water and the

> diversion of water for irrigation has adverse impacts on the ecology of the rivers and riparian ecosystems (WWW.cbd.in & cbd. int, p. 7,2010,2016)

The tourism industry is the main income of TRNC which has a semi-arid climate, hot summers, and mild winters. The small island often encounters with thirsty land leads to water scarcity problem, tourist adds more population both inland and coastal, and the interaction of these activities causes increase significantly temperature and decline in precipitation levels. There exists a study that has shown up growing population effects towards climatically changing.

Climate change leads to a change in the biodiversity of coastal ecosystems in the Mediterranean Sea. Interaction of climate change and local human activities on seaside ecosystems was synthesized in literature by many scholars which are put in table 3.1.The table 3.1 is exemplify how these interaction influenced salt marshes, mangrove forests, seagrass beds and also, shown that how we can understand an incorporate these impact that can be reshaped theory on climate change and ecological resilience Rendering to other reviewers such as Fields and his colleagues (1993), expressed that clear climatic changes proof associated with the human beings as the users of fossil abundantly occurred during the Pleistocene-Holocene transition in which confirmed widespread bio-geographical range shifted through climatic conditions in marine environment such as shifted pole wards to the sea surface and raised the level of water that threatened faunas and other creature life on the coastal and marine region (Fields & et.al. (1993).

Intergrade the different approaches such as biological, social, economical is essential with the active participation of all stakeholders, government, and other relevant

institutions in order to manage and evaluate coastal region the result should be achieved to sustainable use of coastal resources and less or not to damage the beaches.

Table 3.1: Major coastal ecosystems, main climate change & local human stressors.

Ecosystem	Definition	Climate change stressors	Local human stressors	Ref.
Salt marshes	Saline or brackish intertidal areas dominated by salt-tolerant plants, such as herbs, grasses, or low shrubs, occurring primarily in sheltered or depositional coasts in temperate zones.	Sea level rise, warming, rising atmospheric CO2, climate extremes (drought, storms)	Pollutant input, biological invasion, coastal development, coastal engineering, nutrient input, sediment input, fishing, grazing	Halpern et al., 2017& Gedan et al., 2018)
Mangrove forests	Coastal intertidal areas dominated by woody halophytes (trees or shrubs), occurring mainly in the tropics and subtropics worldwide.	Sea level rise, warming, rising atmospheric CO2, ocean acidification, climate extremes (heat waves/cold, drought, storms)	Fishing, forest logging, coastal development, coastal engineering, aquaculture, freshwater input, sediment input, nutrient input, pollutant input, recreation, biological invasion, mining	Halpern et al., 2017& Jennerjahn et.al., 2017
Sea grass beds	Marine flowering plant-dominated systems found in shallow salty and brackish waters worldwide. Some sea grass beds can occur in low intertidal areas.	Warming, sea level rise, ocean acidification, climate extremes (storms)	Nutrient input, coastal development, sediment input, coastal engineering, fishing, physical disturbance, disease, aquaculture	Halpern et al., 2017& Orth et al.,2006
Soft sediments	Un-vegetated, muddy, or sandy marine systems dominated by macro fauna, such as polychaetes, crustaceans, echinoderms, and molluscs.	Warming, sea level rise, ocean acidification	Pollutant input, coastal development, coastal engineering, biological invasion, nutrient input, fishing, aquaculture, sediment input, nourishment/grooming, mining, recreation	Halpern et al., 2017& Defeo et al., 2009
Rocky shores	Wave-exposed seacoasts where solid rock (e.g., boulders, cobbles and exposed bedrock) Predominates.	Warming, ocean acidification, sea level rise, climate extremes (heat waves, drought, storms)	Fishing, pollutant input, biological invasion, coastal development, coastal engineering, sediment input, aquaculture, nutrient input thermal effluent, collecting and gathering, recreation	Halpern et al., 2017& Crowe et al.,2000 Shaffer et al.,2016

Ecosystem	Definition	Climate change stressors	Local human stressors	Ref.
Kelp forests	Shallow marine ecosystems covered by densely growing kelp species (large brown algae) and found in temperate and arctic regions worldwide.	Warming, ocean acidification, climate extremes (heat waves, storms)	Fishing, kelp harvesting, pollutant input, nutrient input	Halpern et al., 2017& Wernberg et al.,2019
Coral reefs	Underwater tropical marine ecosystems characterized by reef-building corals.	Warming, sea level rise, ocean acidification, climate extremes (heat waves, storms)	Fishing, coastal development, sediment input, nutrient input, coastal engineering, pollutant input, disease, recreation, collecting and gathering	Halpern et al., 2017& Kleypas et al.,2007 Hoegh-Guldberg et al.,2017
Oyster reefs	Reefs formed due to dense aggregations of bivalve shellfish in temperate and subtropical estuaries	Warming, sea level rise, ocean acidification, climate extremes (drought)	Pollutant input, coastal development, coastal engineering, fishing, nutrient input, biological invasion, sediment input, disease	Halpern et al., 2017& Beck et al., 2011& Rodriguez et al.,2014
Climate change and local human stressors are based on [Halpern et al., 2017] (those with a score of greater than 2 are considered). Additional stressors are added when needed according to reviews on a specific type of coastal ecosystem.				

Source: (He & Silliman, 2019)

This context tries to approach to ICZM system as a tool for managing these natural resources in TRNC where tourism is a main source of income and on the other hand, plays a major role in the degradation of the coastal marine environment. However, in recent years, the rapid development of the mass tourism industry in this small island has caused serious disturbance to marine habits instance Sea turtle is the most important issue for environmental conservation issues (https://en.wikipedia.org).

The boundary of land and sea is the most complex, richest, and most diverse of the coastal resources opportunities to support economic and social development is must greater thank in the terrestrial environment or greater than in the terrestrial environment or the purely marine environment it is the interface between the sea and the land where we find the most complex most rich most diverse forms of Natural Resources and they sustain many different forms of economic development and much competition for access to and often exclusive use of the coastal area and coastal resources now the challenge. Sciences and researchers face as managers are trying to maximize the potential use of these resources without damaging the ravers of space which creates those resources in the first place we need integration in the sense that there are different economic and social groups wanting to have access to the coast and what we have to do? is try to treat them equitably so everybody has an equal chance of access to the resource but without damaging the resources for other people to enjoy and use ineffective ways then, it means that should have to get the different economic sectors to try to coordinate their activities so they don't disrupt the potential flow of benefits from the coast without destroying the natural systems and that's the challenge. Hence, integration can use for different economic sectors, social demands for the coast, and difficult different political systems trying to coordinate the development process more effectively, here it needs to have coordinated the development process more

effectively, not apply for environmental conservation, since the environmental conservation is one tool to manage the natural systems.

ICZM is defined as a set of principles to guide development planning it is meant to create a working environment where people see that there are ways of doing things that are less environmentally damaging more economically responsible and create a greater social benefit and that is difficult to get people to think about the environment the economy and social aspects in the same sentence.

The aim of ICZM requires to reach sustainability development, sustainable coordinate development, and sustainable environmental conservation. So, the key purpose of ICZM is as follows:

1. Simulating and assessing capacity development and complex social – ecological system.
2. Setting up working associations with policymakers, partners, and the open inside a CZ community.
3. Advancing great illustrations of transitional endeavors towards economic advancement
4. Foundation checking programs committed to information and data required for SAF applications and organized for open participation.
5. Empowering human exercises to be self-regulating regarding asset corruption and to bearable limits of social-economic equality.
6. Understanding that approach cannot oversee these CZ frameworks without a SD arrange that coordinates the past five necessities into a nonstop evaluation handle.

Economic value of costal line makes as an essential region for tourism industry and some communities who have dependency to seashore economy. Therefore, this is the main reason these places should be managed very well. The concept of integration is a big challenge and it's a complex concept that is basically working on it towards a long-term goal requires a process of strengthening development planning and getting the different stakeholders, different interest groups to actually share and understanding why the coast is important to each of them so could be said, starting to build awareness, awareness creates the basis of a dialogue between the different players, cooperation and understanding of common issues in the coastal development game once you have cooperation and understanding of common issues demand to create crucial activities and actions made create more sophisticated development planning system provides dialogue creates cooperation that it is the basis for coordination of investment policy of principles of management and once a city have those elements for working towards the broader concept of integration.

3.5 Climate Change Impact on Biodiversity

It is the fact of the matter that human place activities such as increasing pollution, siltation, and contraction vitiate the local beaches environment, continues leads to transformation of the areas (zone and Marian) and its reliant tourism economy (Perera & deVos 2007). Numerous scholars synthesize the impact of climate change has strongly affected all levels of biological organization of coastal ecosystems. The main impact briefly is mentioned here:

1. Impact on gene expression, cellular and whole organism driven to organisms' growth, behavior, reproduction and even survival or not survival.
2. Impact on physiological of coastal biota leads to shifts in the range of species and variation in species interactions that will alter global redistribution.

(Changes in the rates of range expansion or contraction differ dramatically among species).

3. Changing in interaction of species instance diets or habited presenting novel and more potent herbivores, breaking down mutualism or reversing in terms of competition (winners and losers).
4. Reshufflings communities range leads to tropicalizing of temperate zones and polarization of polar zones. The consequence of these dynamic changes can be affected tropical, temperate, and polar zone and global and regional scales.
5. Impacts on the population and community level propagate and act on organism coastal ecosystems such as the provision of important ecosystem services, coastal protection, fisheries maintenance, pollution modification, and carbon sequestration (negatively or positively). Box one shows the impacts of climate change on the coastal zone ecosystems.

Box 1. Impacts of climate change on coastal ecosystems: case studies. (He & Silliman, 2019).

Here were view cases where climate change has been demonstrated to affect gene expression and cellular/whole-organism physiology, population and community dynamics, and ecosystem functions and services in coastal ecosystems. These not only represent areas where scientific understanding is rapidly advancing but are also areas of ecological or economic importance.

Impacts on organism genes and physiology: Climate change can have strong impacts on gene expression and cellular and whole-organism physiology. Heat stress, for example, has been found in both coastal animals and plants (e.g., seagrasses) to up-regulate genes that encode heat-shock proteins (Tomanek et al., 2017& Marin-Guirao et al., 2017) .A range of other physiological/metabolic processes, including photosynthesis and respiration, increase with temperature within the range of species tolerance (before the tolerance threshold is reached and acute thermal death occurs)(Dony et al., 2012). This explains, in part, the increased likelihood of phytoplankton blooms and disease outbreaks with ocean warming (paerl et al., 2010 & Altizer et al., 2013). For heterotrophic organisms such as salmon in the Pacific Northwest, increased respiratory rates in warmer waters can lead to energy demand exceeding energy intake, reducing their aerobic scope for activity and their growth and reproduction (Dony et al., 2012 & Farrell et.al., 2008). Warming temperatures may more strongly affect polar and tropical marine species than temperate marine species, because polar and tropical marine species have evolved in some of the most temperature-stable marine environments on Earth and have very narrow tolerances to temperature variation. (Peck et al., 2014). Rising sea levels can increase inundation stress, reducing the photosynthesis and growth of salt marsh grasses and mangroves on their seaward edge (Donnelly et al., 2001). Ocean acidification is thought to increase the energetic cost of calcification and deplete carbonate ions, reducing calcification in most calcifiers (except crustaceans), including commercially valuable shellfish and habitat-forming species, such as oysters and corals (Kroeker et al., 2010). Reshuffling and shifting of tropical, temperate and polar communities: Reshuffling and shifting of coastal marine communities with climate change have been increasingly documented. Mangroves, for example, are replacing their temperate analogues—salt marshes, tropical seagrasses are expanding and replacing temperate seagrasses, invasive lionfish are increasingly found in temperate waters, and tropical herbivorous reef fishes are intruding and, at times, decimating temperate kelp forests, leading to tropicalization of temperate zones (some of those processes are depicted in Figure 1B). Similarly, boreal fish communities are expanding into the Arctic (Fossheim et al., 2015), leading to borealization of polar zones. Range-shifting habitat-forming species (Saintilan et al., 2014) and keystone consumers (Verges et al.,2014) can even drive sudden community phase shifts. Range shift is not clear for all systems, however. Coral reefs' poleward expansion, for example, can be constrained due to limited solar radiation that is required for corals to sustain their symbiotic photosynthetic algae (Muir et al., 2015). Indeed, in the tropics where species with limited thermal tolerance are living close to their temperature optima (Sunday et al., 2011), increased mortality and extinction may lead to simplification of biodiversity and even collapse of tropical communities, as seen in some coral reefs (Hughes et al., 2017), mangrove forests (Sippo et al., 2018), and tropical seagrass beds (Thomson et al., 2015).

Alteration in ecosystem function and services: Mangrove encroachment in salt marshes under warming, for example, can promote wetland carbon stock (Kelleway et al., 2016). Sea level rise may increase the lateral extent of coastal wetlands (Figure 1) and enhance their carbon stock, especially in areas where wetland landward movement is not blocked by human infrastructure (Rogers et al., 2019). Sea level rise, however, has also been found to reduce the production, nitrogen sequestration and denitrification functions of tidal marshes (Carft et al., 2009). Drought, heat, and storm-driven die-offs of salt marshes, mangroves, and coral reefs reduce the coastal protection services those ecosystems provide (Temmerman et al., 2012). Furthermore, climate change can disrupt the fisheries ecosystem services valuable for many coastal societies. While some fish populations may be able to escape warming via range shifts, fishes, including commercially valuable shellfish and finfish, cannot escape ocean acidification (Stiasny et al., 2016). Predicted collapses of marine capture fisheries and coral reefs driven by ocean acidification by 2200 have been valued at 97 to 301 billion 2014 dollars per year (Colt et al., 2016) .

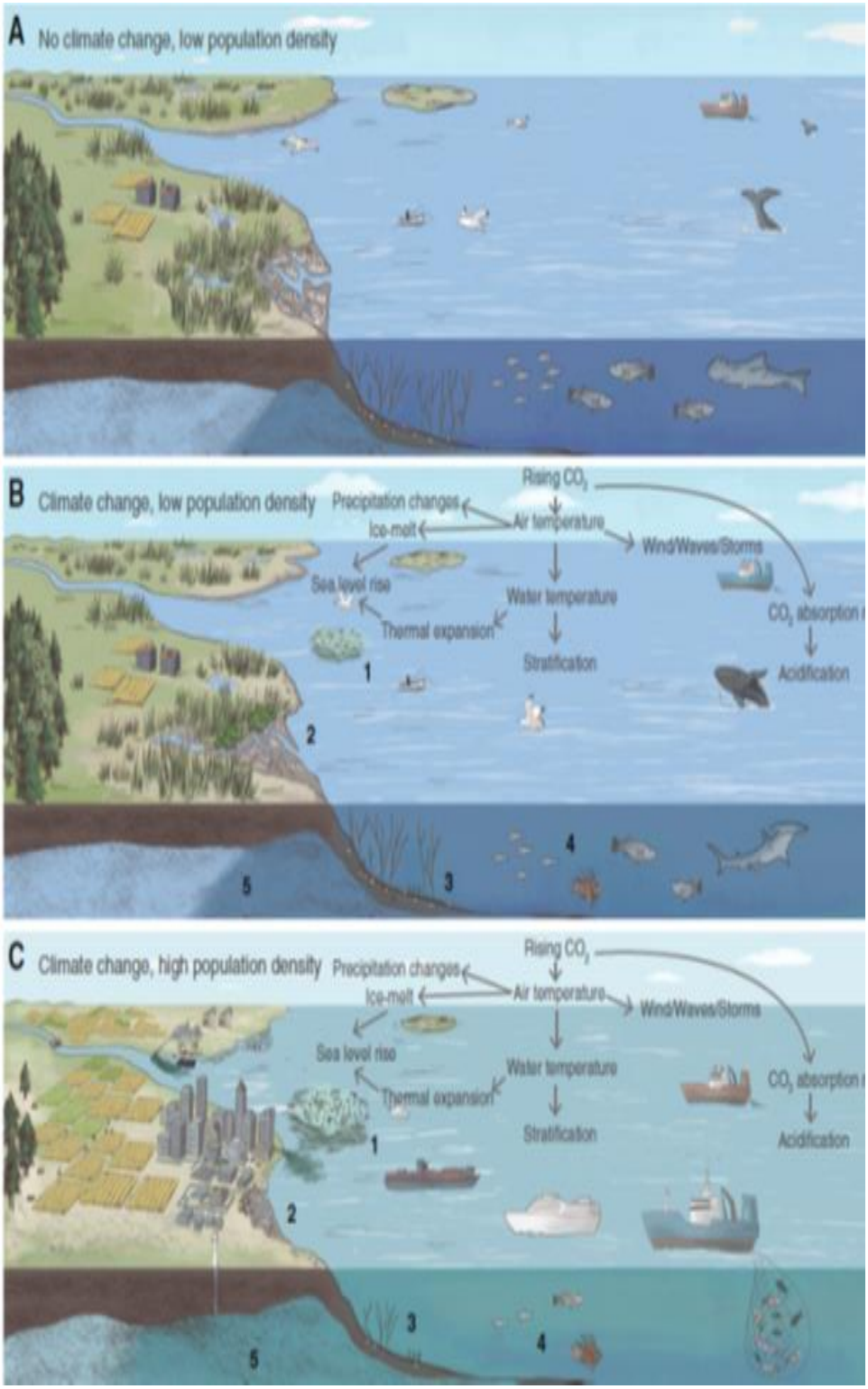

Figure 3.4: (1 & 1.B): in table, Impact of climate change and local human activities on coastal ecosystems.
Source: He &Silliman (2019)

Figure 3.4 shown, how residents' action on coastal ecosystems, has affected the climate change.

Picture A: Without any over population and climate change;

Picture B: Climate change, low population density;

Picture C: Climate change, high population density, Picture C: Scenario when the system is pressured primarily by climate change. Scenario when the system is pressured by both climate change and intense local human impacts.

In (B):

(B)1: Climate warming promotes algal blooms (Gobler et al., 2017);

(B)2: Seaward loss and landward movement of coastal wetland as a result of sea level rise (Donnelly et al., 2001), and mangrove replacement of salt marsh grasses as a result of climate warming (Saintilan et al., 2014)

(B)3: Warming-driven replacement of temperate seagrasses by subtropical seagrasses (Mickeli et al., 2008), and loss of bivalves due to ocean acidification (Talmage et al., 2009);

(B) 4: invasion of tropical fishes into temperate coastal waters and changes in fish species abundance and composition with warming (Whitfield et al., 2014);

(B)5: Saltwater intrusion due to sea level rise (Ferguson et al., 2012).

In picture C:

(C)1: Impacts of warming on algal blooms and hypoxia are exacerbated by eutrophication (paerl et.al., 2010);

(C)2: Loss of coastal wetlands due to the compounding effects of sea level rise and sea reclamations for urban, industrial, and agricultural expansion (Enwright et al., 2016);

(C)3: Seagrass/bivalve loss is exacerbated due to synergistic/additive interactions between warming/ocean acidification and eutrophication (Gobler et al., 2014 & Lefcheck et al., 2017);

(C)4: Collapse of fisheries due to synergistic interactions between overfishing and warming (Kirby et al., 2009);

(C) 5: Intense groundwater withdrawal exacerbates saltwater intrusion driven by sea level.

To sum up, still, there is no comprehensive assessment was explored the impact of climate change on the functions and services of the coastal ecosystem. Moreover, the interaction of human activities in which tourism is the main part of these activities and how to manage them will discuss in the next section.

3.6 ICZM and Tourism Nexus

The devastating impact of mass tourism on coastal areas and coastal communities is a foregone conclusion (Ghosh, 2011). In particular, the pressure of 3S (sun, sea, and sand) tourism on coastal zones and coastal resources has been highlighted by numerous studies (Adrianto et al., 2021; Alipour et al., 2017; Dahl & Støttrup, 2012; Koens et al., 2018; Lithgow et al., 2019; Phillips & Jones, 2006; Zahedi, 2008, p. 45).

The impact of tourism in coastal zones has been witnessed and registered in relation to water consumption, energy consumption, declining local fish stock, competition with the local community, pollution, inadequate swage infrastructure, damage to sensitive ecosystems, development of eutrophic conditions and algal blooms, undesirable aesthetics, etc. (Ghosh, 2011; Gössling, 2002; UN Atlas of the Oceans: Subtopic, n.d.).

One of the main areas of contention between pro-sustainable tourism and tourism business-oriented marketers is the challenge of carrying capacity (CC). Tourism carrying capacity (TCC) is ‘the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, and sociocultural environment and an unacceptable decrease in the quality of visitors satisfaction’ (Lithgow et.al., 2019, p. 1). While sustainable tourism supporters are advocating CC analysis and its implementation through planning, tourism marketers are aiming for an increase in the number of visitors without paying any heed to the ramifications of CC (Higgins-Desbiolles et al., 2019).In the case of island states, the application of CC is more critical; islands are highly vulnerable and sensitive due to their small physical and environmental capacity as destinations for coastal and beach tourism, which is a dominant mode of tourism globally (Mendoza-González et al., 2018).

The carrying capacity analysis, which is effective in smaller tourism sites (Larson & Poudyal, 2012), can be complemented by the Tourism Opportunity Spectrum (TOS) in the context of ICZM. The TOS considers ‘the interactions among tourists, hosts and the management; and the availability of tourism infrastructure and facilities’ (Huang & Confer, 2009, p. 248). Moreover, ‘over tourism’ has also become a hotly debated topic as numerous destinations are negatively affected by increased numbers of tourists that surpass the carrying capacity (CC) of some of popular destinations including Venice, Amsterdam, Barcelona, and Bali, just to name a few (Alonso-Almeida et al., 2019; Milano et al., 2018; Seraphin et al., 2018).

It is argued that over-tourism and the lack of a sustainable approach to coastal tourism development exhibits a disconnection from the principles of the SES framework that

is also coupled with the absence of collective action principles (Bartholo et al., 2008; Bianchi, 2004; P. Burns, 1999). Glaser et al. (2018, p. 1) believe that 'understanding island-specific human–ecosystem links or small island SESs is a crucial component of enabling sustainability of related livelihoods. This is the case, as SESs has been understood 'as interdependent and coevolutionary, in which social and ecological domains are linked by ecological knowledge, governance arrangements, and ecosystem services' (Andrachuk & Armitage, 2015, p. 3).

The SESs and collective action principles provide a strategic foundation for incorporating coastal communities in a new creative path towards the sustainable management of coastal resources that are threatened by mass tourism development. To achieve this, the institutionalization of ICZM should operate not necessarily as a solely technocratic practice but as an instrument of reconciling and restructuring a creative coastal management system with communities at its center stage. The road to this goal is not easy due to the nature of the context (i.e., the forces of power relations and the existence of diverse actors); however, it can be durable and productive if the socio-political environment respects the SESs and collective action principles. In the end, the implementation of ICZM should be perceived as a break from traditional biodiversity protection on two fronts first, by reconciling tourism development with coastal integrity, and second, by engaging community participation in the whole process as a guarantee for the role of the grassroots in the conservation and management of coastal resources (Few, 2000).

Finally, Coastal zone works as a dual phenomenon, Mediterranean Basin has high demand by tourist's beach users in all sorts of natural and unique built environments, so exceedingly demand the result of rapid development of this industry made endanger

of coastal areas. On the other hand, these areas are of vital economic importance for TRNC. Table 2.3 refers to some impacts of tourism on environment.

Table 3.2: Set up development of Tourism & its Impact on Environment of Mandermoni- Dadanpatrabarh

Basic Infrastructure & Resource Demand	Tourism Operation	Impacts
Water Consumption	Release garbage, Sewage into cannel, river & beaches which are fall in that coast	Contamination, Health Hazards, Destruction of Aquatic Plant & animals Life.
	Release of Oil from Cruise Ships, Ferry Boats, Toller etc.	Increasing Toxicity in Water Bodies, Contaminated Sea Food etc.
Beach Driven	Increase in Travel to Destination by both petrol & Diesel Driven Car etc.	Air & Noise Pollution adverse impact on Plant and animal life
Hospitality & Accommodation	Violate of the Coastal Regulation Zone (CRZ) notification of 1991, chopping of trees, Destruction of shifting Dunes for expansion & Construction of Resorts, Hotel, Shop etc. & thoughtless use of Fire in Beach and Park for amusement.	Loss of Forest Wealth, Constant Trampling of Plants, Displacement of People, Traffic Congestion, and Land use Pattern Change and also increased Pollution.
Monuments	Use for Recreational Purposes, Excessive usages for Site seeing etc.	Over Crowding, Disfiguring Loss to Preservation etc.

Source: (Dandapath &et.al 2016)

3.7 Commons pool resource (CPRS) and Tourism

All of the important sources consisting of inexperienced sources, wildlife, fisheries, forests, grazing system, water sources, irrigation systems, agriculture, wherein one person`s use subtracts from another's use, or to exclude different customers outdoor the organization from the usage of the sources, extra regularly ends in difficulty, pricey regularly no longer renewable (non-substitutable), meanwhile, On the opposite hand,

their increase non-conventional or new commons additionally included of this definition of CPRs that have been focused on city commons consisting of constructing apartment, parking spaces, playgrounds, and so on in some way associated with the tourism enterprise (https://dlc.dlib). In 2011, WTO defined tourism as a full account of its current and future economic, social, and environmental impacts addressing the needs of visitors, the industry, the environment, and host communities.

Tourism coastal and marine merchandise could be critical elements of environmental assets landscape, scenery, climate, organic lifestyles and so forth which generate earnings for communities, however by and large each personal and authorities' traders, therefore, overuse of those not unusual place assets will chance immediately and in a roundabout way the person lifestyles, via way of means of climate-converting and pollutants and etc. Moreover, over-consumption works as a twofold subject, one influences a person's lifestyle (via way of means of destructive surroundings and assets deficiency), second, has an effect on business, finally, affected the financial system of the destination.

ICZM as a device can set up on the way to make the stability among environmental controlling harm surroundings and economics essential tourism-associated pastime offers harm to the surroundings or positioned stress at the herbal resources.

In 2006, Ostrom& Vatn defined that Scholars have had an inclination to signify perfect solutions for adapting to open get entry to troubles recognized with not unusual place pool resources, for example, fisheries and water systems, also they believed cautioned that a few theories consisting of institutional theorists need to flow from touting simple after being investigated for frequently prescribed arrangements

implemented purposefully withinside the discipline and additionally locate the solution as dissecting versatile, multi-stage management as diagnosed with complex, growing asset frameworks (Ostrom& Vatn, (2006)).

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In small islands such as Cyprus, ICZM can be assisted in planning for adaptation to climate changes which is a consequence of mass tourism because mass tourism and also any other alternative tourists will provide an anticipatory and predictive approach to facilitate the response to medium, long terms and also short terms need of tourists (Belleand Bramwell, 2005; Tobeyet al., 2010).

Chapter 4

THE CASE OF NORTH CYPRUS

4.1 North Cyprus: Country Profile

Chapter 4 would present information about Republic, but mainly will focus on TRNC part, The focal way of this research is on North Pross and its history and other topics that will introduce geography, politics, economy, tourism, resources, environmental challenges, environmental systems, and the role of co-management as the basis for coastal zone management (ICZM). In addition, there is some information about where the data was collected.

Cyprus is the third largest and most topographically diversified island in the Mediterranean, behind Sicily and Sardinia that is in Eastern 60-mile southern part of Turkey, west of Syria, and 60 miles in Greece's northern Egypt. Until In 1974, Cyprus was partitioned into two sections. The Greek side is on the south, while the Turkish side is on the north.September 30, 2021, the Turkish community accounts for 18% of the total population of 1,207,359 people (Hatay, 2017). Total populations of TRNC 313626 (2021).

Southern Cyprus joined the EU in 2004, but Turkco currently recognizes the northern part of Cyprus (TRNC). They share a general capital, Nicosia (Lefkosa is in a different location), but are separated by green lines that serve as the borders of two countries. TRNC was designated as a self-sufficient country in 1983.

4.2 Geography of TRNC

With a width of 242 kilometers and a depth of 64 kilometers, TRNC is home to roughly 0.004% of the world's population, with a population of 313,626,(3.355 people, per square meter) . The majority (98%) of the population are Muslims, most of this range are Sunni Muslims, 2% are non-Muslims, mostly Europeans, Christians, Greek Orthodox, Jews, etc. in different Repositions of different religions (Hatay, 2017).

Although Turkish is the official language, some Cypriots speak English as well. The Turkish Republic of Northern Cyprus's currency is the Lira, abbreviated as TL. Five major cities can be found in Northern Cyprus.Map 4.1 shows 5 major cities in TRNC part.

Figure 4.1: Map of North Cyprus
Source: amyvillas.co.uk/map.asp

1. **Nicosia (Lefkoşa):** Nicosia, also known as Lefkoşa, is the capital city of the TRNC and the largest and heart of the city, with a population of 61378 (2021), divided into two subdistricts:1. Lefkoşa 2- Değirmenlik, The importance of the city of Nicosia is as follows.

- Several major centers for formal government sector which are included culture, politics, economy, and administration.
- Historical such as a walled city (central and Metropolis), Dereboyu is known as many business and entertainment venues
- Modern architecture such as new hotel establishment

Other tourist sites include Kyrenia Kap, Kumarcilar Hani, Ataturk Square, the Venetian Colum Great Inn, and the Mevlevi Tekke Museum.There are numerous bars, cafes, and well-known hotels and casinos, including Advantage Lefkoşa Support, City Royal Golden Tulip, and others.

2. **Kyrenia (Grine):** It is a well-known city in the TRNC, with a population of 33,207 ethnic Cypriots and other foreigners (including the British), because it is the best tourist destination. A historic location with a great port, festivals (music festivals), hotels and casinos, some mosques, unchurched museums such as the Shipwreck Museum, beautiful mountains, and amazing beaches. There are also three international universities that attract 14,000 students each year. Tourists from all over the world. In addition, there are some beaches that are important to biologists. Caretta Caretta (or loggerhead) and Chelonia Mydas (or green turtle), for example, are two endangered turtle species that hatch and build nests from mid-June through the end of July or the beginning of September.
3. **Famagusta (Gazi Magusa):** Famagusta, also known as Gazi Magusa, is a municipality in the eastern part of the island with a population of 42,526 (as of October 1, 2020). Magusta is said to have been discovered by the Egyptians around 285 BC. C. It is the center for interrogations of businessmen and Christian meetings. Therefore. Gazi Magusa was once the commercial center

of this island, contributing to the national economy through tourism, education, manufacturing, and construction. From antiquity to the present, Magusta has been known for its medieval architecture and the numerous festivals held within the city walls. Each year,a large number of international tourists are drawn to its distinctive architecture and fascinating historical attractions. Enkomi, for example, dates from the Bronze Age (13th century BC) and is located near the new city of Famagusta; later, the Salamis Bay site was built by the sea. Every year, a large number of tourists visit Salamis Bay.

Magusa has recently seen an increase in various types of tourism, including educational tourism, health tourism, sex tourism, and business tourism, owing to its sunny and beautiful beaches, hotels, casinos, city nightlife, restaurants, and the bar, and it is a place where retirees are dizzy.

Lala Mustafa Pasha Mosque (Cathedral of Saint Nicholas), the Church of Saint George of the Latin, the Othello Tower, the Monastery of Saint Barnabas, and many other friendly hotels are the most tourist attractions in Famagusta.

4. **Morphou (Guzelyurt):** Morphou or Guzelyurt: Situated in a beautiful place in the northwest of the island, it is called a commercial city with a population of 31,116 cities. Its reputation is related to agricultural lands, especially most of the fruits that are produced in the area, especially oranges and lemons. of course. Guzelyut attracts visitors with its large national market and places selling local products, as well as first-class restaurants serving local cuisine and sweets. The Monastery of Saint Mamas and Guzelyurt Hotel, a small urban structure, are two of the most well-known historical landmarks.

5. **Karpaz:** Karpas' geographical feature is well-known among most international and national visitors.It is in the northeastern part of Cyprus. This piece of sand includes more than 46 bright beaches, such as Golden Sands. The unspoiled nature is the habits of wild animals, such as donkeys and different kinds of birds, and its population is 2,026.

   Karpas' virgin land makes it ideal for farmers to grow a variety of vegetables and fruits. The main activities of these farms and beaches are hunting, fishing, and agriculture.

   Traditional restaurants serving Turkish Cypriot food and beverages, on the other hand, attract the most interest in the region due to the quality of the land and its position.There are also some historical places, such as the ruins of Apostols Andreas ,and Ayios Philon.

   In addition, like other North Carolina cities, its coastal areas and clear waters, nature and mild climate make the city an ideal habitat for inland and marine species that suit local tastes tourists.

4.3 Politics and Institutions

Cyprus was split into two splits in 1974 (see 4.2), with the southern or Greek section taking up two-thirds of the country's land and one-third of the Turkish island of Cyprus. Southern Cyprus joined the EU in 2004, but the Turkish Republic of Turkey now recognizes the northern part of Cyprus as North Cyprus (TRNC). Under the system, North Cyprus' politics are conducted within the framework of a representative democratic republic, with the president serving as the head of state and the prime

minister as the head of government. It's a system with multiple parties. There are three components to the two-way government system:

1. Administrative authority

2. Legislative authority

3. Judiciary In the TRNC, the government is in charge of exercising administrative power, while the legislature and the judiciary are independent in terms of administration and legislative power.

Figure 4.2: Administrative Map of Cyprus
Source: ontheworldmap.com/cyprus/administrative-map-of-cyprus.jpg

The legislature is made up of 50 members who are chosen proportionally in five constituencies. Every five years, a presidential election is held.

Turkey Cyprus is highly dependent on Turkey with the support of the Turkish government.. Despite the fact that the Turkish Cypriot government and the Turkish government are at odds, the TRNC is controlled by Turkish politics. Many Cypriot

academics feel that the TRNC is a puppet state of the Turkish government. After December 9, 2020, there will be ten ministries and agencies as follows.

4.4 The Locations of Study Sites

The research focuses on some important villages near the coast which are supposed to cooperate and collaborate in co -management requires clarifying the strengths and weaknesses of adaptive environmental management towards implementing of ICZM in the TRNC. Public opinion as a purpose sampling, is the basis for evaluating and examining these concepts, so finding the source of dilemmas is the root cause of many changes in tourism impacts. Related actions to implement ICZM, the final contribution in coastal areas is one of the essential economic common sources of TRNC. Also, identify the TRNC responsibility for global climate change which is of significant discussion around the world today. Primarily the villages are listed on, and their locations are shown on the map (4-3) below

Figure 4.3: Map of North Cyprus (Turkish administered area) with indicated surveyed communities (Bafra, Kumyali, Kaleburnu, Dipkarpaz, Yenierenkoy, Balalan, Kapkica, and Tatlisu).
Source: http://wikitravel.org/en/File:Turkish_Cyprus_regions_map.png

1. **Bafra or Vokolida (Βοκολίδα)** is a new interior tourist resort and resort in the Mediterranean with a hotel area on the Karpaz Peninsula in Northern Cyprus, with its sunshine all year, and just a few hours by plane in Europe. Bafra is located on the east coast of Northern Cyprus, with a de facto total population of 662 (477M, 185 F) or (Total, 514 M. 344, F.170) de jour populations. One of the most attractive beaches, the beautiful beach is long and covered with fine sand. Its width is7.5 Sq.km (coastal line). The common beach is Halk Plaji, with various tourist facilities such as restaurants, changerooms (changeroom (regional use) and sporting events. In addition, there are tennis tournaments and after-dark parties every year. Large investors are interested in accommodation, the Kaya Artemis hotel is the most popular with entertainment activities or grand casinos are available.
2. **Kumyali:** This small beach and fishing pier, just off Kumyali village (Koma tou Gialou), is ideal for a final stop and for a swim before making the long drive to the western part of the peninsula to the beaches are more charming basically from Karpaz. The village of Kumyali, which earned its place in history as Coma in 1574 and under the Koma tou Yialou and Komialik in 1885, is attached with the village of Mehmetcik and has a rich past, has total of 710 population 374 male and 336 female (de facto) or total 666 population (344 M, 322 F) de jour populations , width of coastal line is 9 Sq. km. the results of the work done in Kumyali show that the village was an area of permanent settlement from the years 750 to 475 BC.
3. **Kaleburnu:** Coastal zone area is 10 Sq.km. Galinoporni (Turkish Greek: Kaleburnu) is a Turkish Cypriot village in Cyprus, located south of the Karpas Peninsula. The village has a stable population but is also inhabited during the

summer months by villagers who migrate to the UK due to the Cyprus dispute. Total population of Kaleburnu is , 372(M. 165 & F. 207).

4. **Tatlisu:** 40 km east of Kyrenia lies between the Beşparmak Mountains and the Mediterranean coast. It is the northwesternmost region of Famagusta County. According to the census, Overall, 1,379 populace (M. 858 & F.521). All inhabitants of Tatlısu are immigrants. After 1974, a few Turkish Cypriots living in southern Cyprus settled in Tatlısu and people from various parts of Turkey also migrated to Tatlısu, Cyprus. The area of Tatlısu, including agricultural land, is 66 square kilometers. The 16 Sq.km coastline usually consists of rocky fields, but there are also beaches and coves in the Tatlısu area.
5. **Balalan:** The other coastal area village is Balalan which is located on Karpas area in Platanissos village in the Famagusta region of Cyprus, TRNC, De facto controller is responsible for this village, its coastal area is 11 km Square, 102 people (M. 50 & F.52)
6. **Kaplica:** This village lies on northern coastal road, just 50-minute distance by car from Famagusta. The population of is, 411(M. 206, F. 205),10 Km squire is its coastal area.
7. **Dipkarpaz:** The Karpas region is rich in underground deposits, with 2,026 (M.1,024 & F.1,002) residents, and a coastal area of 50 (each side 25 SQKm) Square kilometers. This area known as fruits, olives and tobacco are planted in large quantities, although tractors are still a novelty in many small towns scattered in the area, and many jobs still depend on traditional horse-drawn tools. Another important source of income in the area is fishing, and the towns of Bogaz and Kumyali are the main fishing centers of Karpas. In the 20th century, there was some mining in some parts of the Carpathian Mountains.

These areas are rich in various minerals, but these mines have long been closed. Today, except for a few abandoned buildings, there is almost no evidence that the industry exists.

8. **Yenierenkoy:** Yialousa is a town in Cyprus with 1,673 inhabitants (M. 819 & F. 854) with a 17-kilometer-long coastline on the Karpas Peninsula. Yialousa is technically located in the Republic of Cyprus' Famagusta District, although it is actually controlled by Northern Cyprus as a sub-district of the Skele District.

In general, these communities observe how coastal areas will change as a result of human activity as the number of tourists in coastal areas increases each year. However, this article explores the question of whether action is being taken to conserve and protect the environment of these beaches. Is there Co-management

between these organizations? And why there is no cooperation between them. Are there any discussions about engaging community or resource users in decision making and power sharing in the Turkish Republic of Northern Cyprus?

4.5 Economy of TRNC

Northern Cyprus' economy is liberal and follows a free market strategy influenced by Turkey; indeed, Northern Cyprus' currency, the lira, reflects the country's economic dependence on Turkey. The fundamental reason for the dependency is that, with the exception of indigenous products, all imports and exports must pass through Turkey due to the international embargo. As a result, the island's economic development has

been hampered by the tight embargo. The TRNC's private sector operates with little government interference and prioritizes investors who use the island's natural resources, even if the investment raises the value and employment rate.

Gorgulu in 2014, said that due to the strength of the Turkish currency, also the development of construction, tourism, and education in the North of Cyprus has seen rapid and significant economic growth. TRNC's economic dependence on Turkey is one of the main reasons preventing it from having a mature financial system.

The real fact is that the service industry., which includes tourism, commerce, education, government, and industry (light manufacturing), accounts for 69 percent of GDP in TRNC, with industry accounting for 22 percent and agriculture accounting for 9 percent of GDP in 2007. Table 4.1 shows the value of GDP per capita in 2018 and 2021:

Table 4.1: Growth in North Cyprus' GDP from 2018 to 2021

Years	GDP per Capita	GDP Billion	economy growth%	Unemployment rate %	Export	Imports	Fishery	Higher Education	Population increasing rate
2018	1.3	1.3	%5	6.90%	2.4	3.1	-15.5	81%	0.81%
2019	19.5	3.6	0.5% of GDP	7.0%	-15.4	-15,0	1.4		0.78%
2020	$27,054 (nominal) $40,107 (PPP) or 17.5 %	3.2	122nd (PPP, 2020) or 2.8 % GDP	9.9%	9.6%	9.1%	--	6.8%	0.73%
2021	15%	11.04 %	2.5 of GDP	9.7%	3.5%	8.6	--		0.76%

Source: compiled by authors
Grows rate of GDP: 1.3 , Employee =132.411

Table 4.1 shows a GDP per capita of 1.3, an economic growth of 5%, an unemployment rate of 6.9, imports and exports of 2.4, 3.1 and a tertiary education rate of 81% respectively, the population growth is also 0.81%, while in 2019 this rate has changed accordingly.: 19.5,3.6,0.5,7,15.4,15.4, education of the population increased by 0.78% at the end of the year starting the Covid19 period.

Year 2020: linked to Covid19, there are naturally a few reduced articles. G.D.P. (GDP per capita): compared to 2019 (19.5 decreased to 17.5%), GDP: 3.6 did not reach 3.2 in 2021, becoming 11.04, economy 2.8 in 2020 and 2.5% of GDP decreased while the growth rate in 2019 was 0.5% of GDP. However, the other percentages according to Table 3.1 during the Covid19 period have decreased but unemployment and population rates have increased to the detriment of the environment.

Maintaining green resources is important in terms of agriculture and tourism, agriculture contributes nearly 2.6% (2018), 5.5% (2019), 6.0% (2020) and 7.7(2021), to the economy. Fishing and aquaculture are problematic for some environmentalists and governments as the region's productivity could affect the economy by nearly 65% of most of the island's economy. Although there is no exact information on TRNC's percentage of economic contribution, Marian and tourism activities can threaten common resources, for example: sea turtles are valuable creatures which threat in the Mitterrandian sea, every year they will killed by fisherman. Moreover, many fishes also killed for fishing not only for fishing industry but also because of providing beach facilities for the tourism industry. However, the role of fishermen and aquaculture remains unclear, and this is a controversial concern for environmentalists.

In the statistical year of 2018 to 2021, tourism trade was 20,8,22,12,12,23.8%, respectively, declining in the period 2020 and 2021 due to the pandemic C19.

According to the SPO page, other topics such as media and transport contributions: 7.3,7.3, 1.4,18.1, the high contribution rate of 2021 is hidden in most online activity. Financial institutions: affected by 8.1,8.0,7.9 and 7.1, construction works (7.6,5.8,9.6.5.1) Home ownership: 4.9.5.2,6.3,5.3, end of same industry contributed: 16,2,7,8, 9, 6 11.7. here is table 4.2:

Table 4.2: Tourism and relevant subject percentage increasing during (2018-2021)

Years	Tourism (%)	Wholesale-Retail trade (%)	Hospitality -Rest. (%)	Self-employee & others	Public services (%)	Communi-cations & Transport (%)	Financial. Ins. (%)	Constr-uction (%)	Agric-ulture (%)	Housing ownership (%)	Industry (%)
2018	20.8	11.2	9.6	15.8	13.4	7.3	8.1	7.6	2.6	4.9	16.2
2019	22.2	10.5	11.7	13.2	16.1	7.3	8.0	5.8	5.5	5.2	7.8
2020	12.8%	5.2	5,1	6.1	19.4	1.4	7.9	9.6	6.0	6.3	9.6
2021	-23.8	17.8	5.3	5.9	3.7	18.1%	7.1	5.1	7.5	5.3	11.7

Source: compiled by authors

Decrease another related topic, such as wholesale: 11.2,10.5,5.2,17.8, that the reason for the increase is related to other evidence such as health products and nutrition.

The comparison between 2018, 2019, 2020 and 2021 shows that although covid19 has negatively affected some elements, but increases or positively affects others, resulting in no evidence of actions for protect or conserve our common resources.

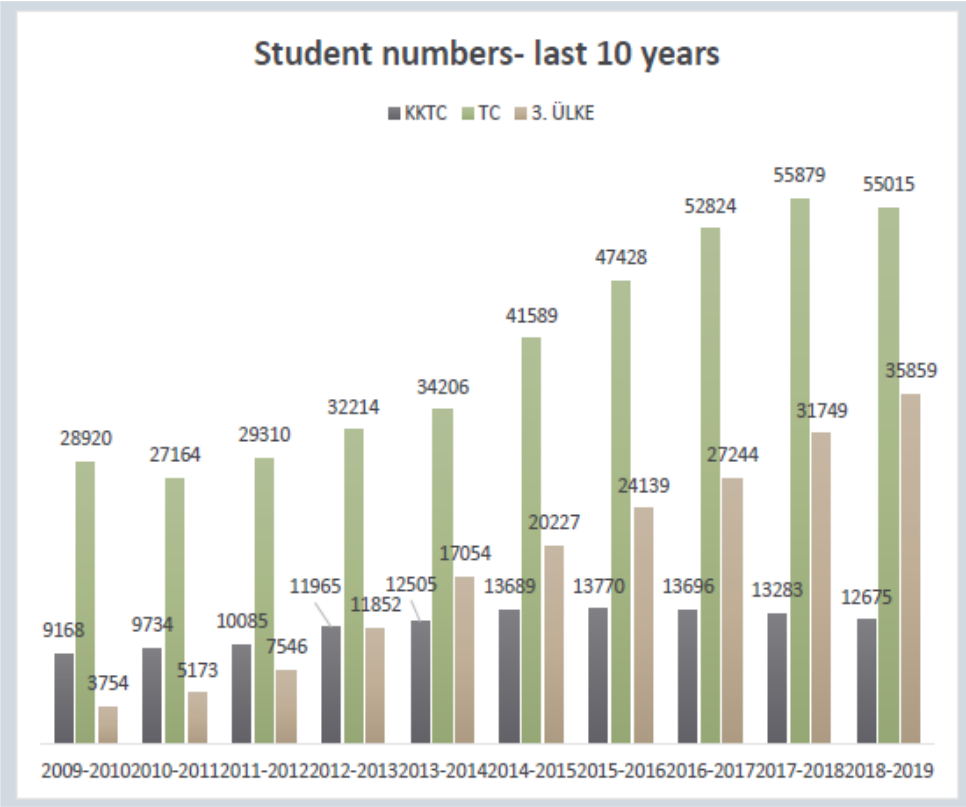

Figure 4.4: The Number of students arrives during last 10 years
Source.: BÜKE YODA vices and education in these services.

Tourism, mainly educational tourism, represented 69% of the island's GDP in 2021and is the main driver of the island's economy. Due to the important role of the service sector, almost 72.3% of the economy depends on the service sector, tourism is the high proportion of see Figure 4.4, YODA and Higher Education in North Cyprus (BÜKE YODA, 2019).

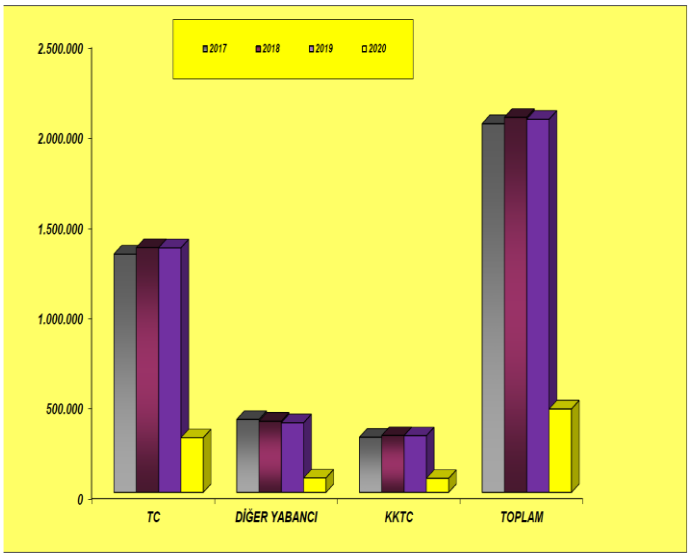

Figure 4.5: Number of arrivals by years (Turkey, other foreigner & T.R.N.C.) 2017-2020).
Source: Statistical yearbook of tourism 2020

The Washington Times also reported that in recent years, the number of tourists visiting Northern Cyprus in the Republic of Turkey has surged. In 2021, there were 923,308 inbound tourists, most of which were from Turkey. Other nations are expected to have 309,445 tourists every night, with a close to 47.9% occupancy rate. The Ministry of Environment and Culture stated to TRNC in 2014 that there were roughly 293,181 tourists. The tourism business has expanded by 6.1 percent between 2018 and 2021, according to statistics. The majority of them are visitors from the United Kingdom and Russia.

The major supply of financial gain within the TRNC is provided by Turkey in the type of aid packages on associate degree annual basis and thru exchange earnings generated from international business and the education sector. The institution of upper education establishments in North Cyprus has begun to contribute to income and employment generation since the 1990s. additional than 40,000 international students come to review at universities in the TRNC each year, particularly since the 1990s. This has

brought several opportunities for job creation and increased employment in the main sectors of the economy. It appears that the upper education sector will still develop and contribute any to the TRNC economy within the coming back years despite political non-recognition and the Cyprus problem. On the opposite hand, the TRNC intimate nice difficulties in attracting international tourists to the island. once borders between the north and the south of Cyprus opened in 2003, several tourists visiting the south of Cyprus began crossing to the north daily. The casino sector is additionally a very important consider attracting international tourists from the south and even from Turkey (as this sector is impermissible in each country). Results of this study have shown that state authorities in the north of Cyprus ought to offer priority to the business and better education sectors. In addition, to a development arrange for the upper education sector, state authorities within the TRNC should conjointly develop policies so as to alter international tourists to create their alternative of trip North Cyprus. coming up with and policies double geared towards up the tourism sector of the TRNC were successful, particularly before 2003. The south of Cyprus has succeeded in attracting several tourists from totally different regions of the world. As of 2008, personal universities have also been established in the south of Cyprus, which could prove to be a serious threat for the colleges within the north in the close to future, this example ought to be seriously thought of by Turkish Cypriot authorities. Further, similar analysis may be conducted for the south of Cyprus to create a comparison with the results of the current study.

Table 4.3: Estimated the number of international students in different universities

Years	**Total number of tourisms**
2018-2019	9200
2019-2020	104,318

Source: Compiled by authors

Table 4.4: Northern Cyprus Distribution of District Populations, 2017-2020

Years	Population
2017	361.234
2018	361.234
2019	370.743
2020	378.673

Source: compiled by authors

Table 4.3 illustrates that education tourism accounts for a substantial share of the TRNC's GDP growth. Nearly 1.23 million tourists visited Northern Cyprus in 2018, with 920,000 of them being Turkish students, resulting in a two-fold increase in tourist visitation from 2019. (570,000).Seasonal tourists are another sort of tourist who contributes to the economy of the TRNC (foreign tourists) TRNC is a good area for foreigners to visit since it has a variety of lodgings with diverse amenities specifically different star hotels, vacation villages, boutique hotels, traditional village houses, touristic bungalows, and guest houses are examples of lodgings that may respond to the needs of all types of tourists, including guest houses, touristic bungalows, guest houses, and eco-tourism hotels.. However, the TRNC has a variety of attractions and service sectors that meet the needs of international visitors, but there are some issues that may have an impact on the tourism industry, such as high transportation costs and a lack of direct flights to Cyprus. Furthermore, the embargo has had an impact on the tourism industry.

4.6 Tourism

According to Goh & Law in 2002, tourism is one of the most dynamic and fastest expanding sectors of many destinations' economies. Many studies have found a correlation between the expansion of foreign trade (one of which is tourism) and economic growth.

1. Economy
2. Social
3. Environment

Although the economy has the greatest impact in many countries, particularly small islands like Cyprus, experts are increasingly concerned about environmental challenges. However, whether or not tourist industry growth can be used to boost the economy is a hot topic among academics these days. TRNC is a small island with limited resources and a local market, yet it is a popular destination for international travelers each year because it is a rapidly rising country. Swimming pools, an aqua park, green spaces and natural land that are integrated into the environment, hot sand and warm water that attract health tourism visitors, and other amenities that meet guest expectations, such as a friendly environment, rich gastronomy, and universities with modern facilities, are just a few of the entertainment options available in North Cyprus. Another distinguishing quality of this small island is its safety, as well as its low crime rate; all of these factors combined to create this a unique tourist destination. The following table 4.3 shows the number of foreigner ,Turkish and Cypriot travelers the years of 2006 up to end of 2015. According to a report published by the Ministry of Tourism and Environment Tourism Planning Office under the title of Statistical tourism yearbook 2015.

Table 4.5: Arrivals by method of transportation and year (Turkey, another foreigner and TRNC) (2011-2020). Source: Statistical yearbook of tourism 2020

YILLAR	T.C. (TURKEY)					DİĞER YABANCI (OTHER FOREIGNER)					K.K.T.C. (T.R.N.C.)					TOPLAM (TOTAL)				
(YEARS)	HAVA (By Air)	%	DENİZ (By Sea)	%	TOPLAM (TOTAL)	HAVA (By Air)	%	DENİZ (By Sea)	%	TOPLAM (TOTAL)	HAVA (By Air)	%	DENİZ (By Sea)	%	TOPLAM (TOTAL)	HAVA (By Air)	%	DENİZ (By Sea)	%	TOPLAM (TOTAL)
2011	739.337	92,3	61.989	7,7	801.326	212.590	96,3	8.173	3,7	220.763	219.272	95,3	10.903	4,7	230.175	1.171.199	93,5	81.065	6,5	1.252.264
2012	848.622	93,8	55.883	6,2	904.505	254.696	97,3	6.985	2,7	261.681	237.052	96,0	9.783	4,0	246.835	1.340.370	94,9	72.651	5,1	1.413.021
2013	865.896	93,8	57.412	6,2	923.308	303.946	98,2	5.499	1,8	309.445	247.741	96,1	10.160	3,9	257.901	1.417.583	95,1	73.071	4,9	1.490.654
2014	966.749	94,7	53.828	5,3	1.020.577	339.387	98,2	6.113	1,8	345.500	271.211	96,8	8.925	3,2	280.136	1.577.347	95,8	68.866	4,2	1.646.213
2015	1.046.194	94,2	64.601	5,8	1.110.795	366.772	98,5	5.677	1,5	372.449	280.728	96,6	9.993	3,4	290.721	1.693.694	95,5	80.271	4,5	1.773.965
2016	1.155.890	94,9	62.342	5,1	1.218.232	354.507	98,8	4.334	1,2	358.841	275.349	96,4	10.136	3,6	285.485	1.785.746	95,9	76.812	4,1	1.862.558
2017	1.242.580	93,8	81.668	6,2	1.324.248	405.475	98,9	4.607	1,1	410.082	297.316	95,7	13.368	4,3	310.684	1.945.371	95,1	99.643	4,9	2.045.014
2018	1.271.417	93,5	88.003	6,5	1.359.420	393.467	98,3	6.738	1,7	400.205	303.461	94,7	16.875	5,3	320.336	1.968.345	94,6	111.616	5,4	2.079.961
2019	1.283.785	94,5	74.680	5,5	1.358.465	384.965	98,3	6.549	1,7	391.514	305.094	95,6	13.919	4,4	319.013	1.973.844	95,4	95.148	4,6	2.068.992
2020	275.542	89,5	32.175	10,5	307.717	79.538	98,0	1.582	2,0	81.120	71.465	90,7	7.345	9,3	78.810	426.545	91,2	41.102	8,8	467.647

Table 4.6: Number of arrivals by ports of entry and years. (Turkey, others foreigner and T.R.N.C) (2011-2020). Source: Statistical yearbook of tourism 2020

YILLAR	ERCAN				GİRNE				GAZİMAĞUSA				KARPAZ				TOPLAM			
(YEARS)	T.C. (Turkey)	DİĞER YABANCI (other for.)	K.K.T.C. (T.R.N.C.)	TOPLAM (TOTAL)	T.C. (Turkey)	DİĞER YABANCI (other for.)	K.K.T.C. (T.R.N.C.)	TOPLAM (TOTAL)	T.C. (Turkey)	DİĞER YABANCI (other for.)	K.K.T.C. (T.R.N.C.)	TOPLAM (TOTAL)	T.C. (Turkey)	DİĞER YABANCI (other for.)	K.K.T.C. (T.R.N.C.)	TOPLAM (TOTAL)	T.C. (Turkey)	DİĞER YABANCI (other for.)	K.K.T.C. (T.R.N.C.)	TOPLAM (TOTAL)
2016	1.155.890	354.507	275.349	1.785.746	46.718	3.593	7.202	57.513	15.534	558	2.912	19.004	90	183	22	295	1.218.232	358.841	285.485	1.862.558
2017	1.242.580	405.475	297.316	1.945.371	61.921	3.787	10.072	75.780	19.669	629	3.275	23.573	78	191	21	290	1.324.248	410.082	310.684	2.045.014
2018	1.271.417	393.467	303.461	1.968.345	65.543	5.900	13.531	84.974	22.308	632	3.320	26.260	152	206	24	382	1.359.420	400.205	320.336	2.079.961
2019	1.283.785	384.965	305.094	1.973.844	53.217	5.621	11.259	70.097	21.213	731	2.631	24.575	250	197	29	476	1.358.465	391.514	319.013	2.068.992
2020	275.542	79.538	71.465	426.545	27.769	1.318	6.679	35.766	4.395	252	665	5.312	11	12	1	24	307.717	81.120	78.810	467.647

Table 4.7: Shows that the number of accommodations which is established during (2017-2020) for tourists. Source: Statistical yearbook of tourism 2020

ÜLKELER	2017			2018			2019			2020		
(COUNTRIES)	KİŞİ (Tourist)	GECE (Bednight)	%	KİŞİ (Tourist)	GECE (Bednight)	%	KİŞİ (Tourist)	GECE (Bednight)	%	KİŞİ (Tourist)	GECE (Bednight)	%
TÜRKİYE (TURKEY)	710.889	2.134.864	29,6	776.428	2.358.310	28,2	769.736	2.339.638	26,4	154.686	430.698	9,3
İNGİLTERE (UK)	56.433	379.505	5,2	55.141	355.771	4,3	59.925	381.244	4,3	7.552	29.759	0,6
ALMANYA (GERMANY)	89.284	495.538	6,9	72.866	415.368	5,0	61.166	421.657	4,8	24.073	108.480	2,3
FRANSA (FRANCE)	7.136	45.066	0,6	11.005	69.111	0,8	14.940	102.138	1,2	6.068	22.736	0,5
BELÇİKA (BELGIUM)	4.745	30.901	0,4	3.795	29.915	0,4	5.507	37.696	0,4	2.869	10.080	0,2
POLONYA (POLAND)	7.423	52.246	0,7	10.545	76.614	0,9	16.366	122.541	1,4	1.986	11.826	0,3
İSVEÇ (SWEDEN)	9.823	64.033	0,9	12.016	59.538	0,7	3.999	27.739	0,3	6.507	29.453	0,6
RUSYA (RUSSIA)	6.596	33.671	0,5	7.087	35.599	0,4	8.486	41.747	0,5	1.174	3.121	0,1
İSRAİL (ISRAEL)	48.314	191.589	2,7	17.133	62.236	0,7	27.795	105.142	1,2	2.165	6.839	0,2
DİĞER (OTHER)	118.717	674.014	9,3	127.846	722.334	8,6	191.159	764.040	8,6	15.835	51.415	1,1
TOPLAM (TOTAL)	1.059.360	4.101.427	56,8	1.093.862	4.184.796	50,0	1.099.154	4.343.582	49,1	222.915	704.407	15,2
K.K.T.C. (T.R.N.C.)	55.613	122.435	1,7	49.344	107.148	1,3	50.560	112.961	1,3	42.410	82.202	1,8
GENEL TOPLAM (TOTAL)	1.114.973	4.223.862	58,5	1.143.206	4.291.944	51,3	1.149.714	4.456.543	50,4	265.325	786.609	17,0

According to the statistics of tourist arrivals by months and years from 2017 to 2020, there has been an increase in the number of establishing accommodations. In 2017, the number of establishing accommodations was high (58.5), but in 2018 it was low (51.3), and in 2019 it was low (50.4) due to the Covid -19 situation, and in 2020 it was low (17.00).

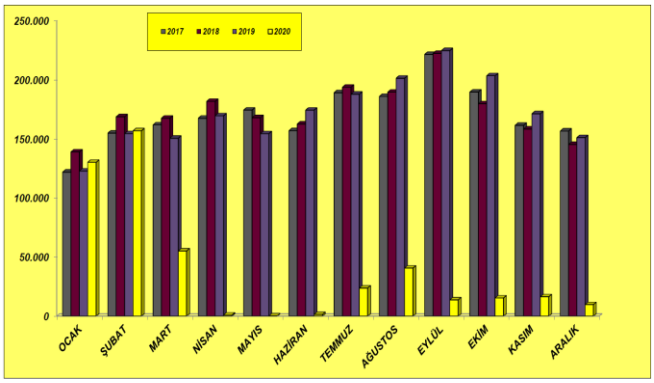

Figure 4.6: Tourism arrivals by months & Years during 2017upto 2020
Source: Statistical yearbook of tourism 2020

As seen in table 4.7 and figure 4.6, this rate resulted in greater economic growth and income.

Table 4.8: Th impact of tourists on economy in TRNC (2011-2020)

YILLAR (YEARS)	NET TURİZM GELİRİ (MİLYON USD) (Net tourism income)	DIŞ TİCARET AÇIĞINI KARŞILAMA ORANI (%) (The ratio of net tourism income to the trade balance)
2011	459,4	29,7
2012	571,9	36,1
2013	613,4	38,9
2014	679,4	41,2
2015	697,7	50,5
2016	739,4	50,9
2017	864,9	51,7
2018	912,4	53,2
2019	954,5	63,0
2020	165,4	13,6

Source: Statistical yearbook of tourism 2020

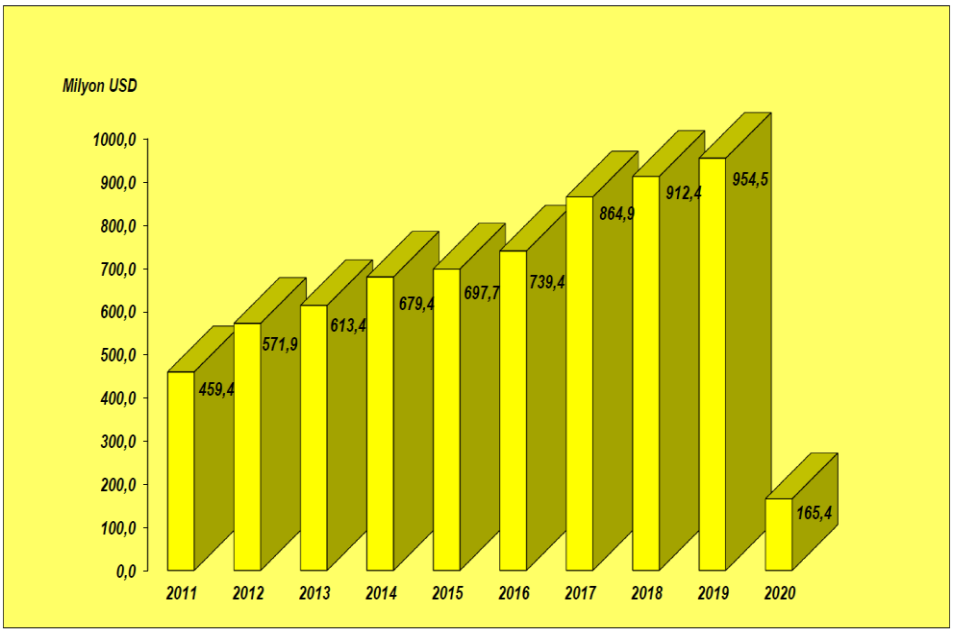

Figure 4.7: Net tourism incomes by years (2011-2020)
Source: Statistical yearbook of tourism 2020

The number of tourists arriving and the number of individuals building lodging in the TRNC rose from 2018 to the end of 2020, resulting in an increase in the tourism industry's economic and net income. Is there, however, any graph or table that calculates or measures deforestation, pollution, or other negative effects of tourism on this beautiful island?

4.7 TRNC’s Resources

Despite its unfertilized soil, low production of seabed’s, and sweet water lake, TRNC has a remarkably diversified fauna and flora. Cyprus is the most important areas of the world's region that must be preserved since it has a high biodiversity and international landscape resources, some of which remain virgin. Furthermore, Cyprus possesses a diverse range of natural resources, including the following:

- Coastal and mountain forests, sensitive coastal sand dunes, endangered animals like the Monk Seal, and two valuable turtle species (Caretta-Caretta &Chelonia Mydas), as well as tens of thousands of migrating birds that arrive in the spring and autumn.
- Dwarf juniper scrubs, Garrigue (plant community) or phrygana, limestone pavements, and dune vegetation can all be found in North Cyprus forest settings. Among the most important plant species are Bosea Cypria, Astragalus Cyprius, Nigella Ciliaris, and Rosmarinus officinalis, as well as a large number of Olive trees. Bonelli's Eagle (Kyrenia Mountain Region), Audouin's Gull (Kleides Islands), and Little Egret are all rare bird species (Kalkanl Wetland - Akdeniz Region).
- The protected area of Akdeniz (Ag Eirini) or Mediterranean, which covers 143.2 square kilometers and is home to a diverse range of plant, animal, and bird species, is located on Cyprus' northwestern coast.

- The most important natural resource for the north half of Cyprus is Alagadi (Alakati), which was the first portion of the island to receive formal legislative protection. Alagadi is around 18 kilometers east of Kyrina on Cyprus' north coast. Special Environmentally Protected Area (SEPA) of Karpaz, is located in the northwestern corner of Cyprus, at Cape Kormakit. Karpaz draws a lot of research attention because of its diverse habitats (mixture of different habitats), as well as an important beach for endangered turtle species. Springtime rains, untamed fauna and flora, a marine and coastal zone, hilly landforms, plains with woods, stream beds, marshes, and a coastal zone Cyprus appears to be in a hot zone, as evidenced by considerable temperature increases and decreases in rainfall levels. Desertif ication is a serious threat to the island, and the outcome of desertification points to climate change. Cyprus has a constant temperature range of 0°C to 40°C. The median temperature in the hottest months (July and August) ranges from 34°C to 40°C, while the coldest months (January and February) range from 7°C to 15°C.

In summary, although unfertilized soils, low productivity of the ocean and hot and dry weather, but there are endemic sand dunes, shrub land, olive trees, honey forest and pine forests in the mountains, there are certain species of species and subspecies. Many environmentalists and other experts have drawn attention to the remarkable diversity of animal and vegetal and marine resources in Northern Cyprus. The North Cyprus Trial Network seeks to safeguard and preserve those precious areas that appeal to many tourists.

4.8 Environmental Challenges

In view of the economic dependency on the tourism industry, this small island leads to over-use of land in terms of land users and varied pollution. However, Cyprus' major environmental issues are:

1. **Water supply and water shortage:** although the island is one of Northern Cyprus's major environmental challenges, water supply, water storage and other. A large number of Cyprus' lands have been found to be suitable for agriculture, but water shortcomings have not been used and the majority of farmers and animals in the house have changed their main work and try building a restorer, hotel or lodging for tourists, which is the o the lagoon of drinkable water.
2. **Wastewater management:** no water management program is available especially following rainfall which would lead to destruction of some small ecosystem populations that focus on compliance with acquits and contribute to broader environmental and social damage strategies (e.g. tourism). Wastewater management
3. **Municipality's solid waste:** varied building sites such as hotels, lodging and houses leads to overland usage on one side and after many years only building rest concerts, which expose numerous social and economic ecosystems. UN Needs to manage, according to reports. (Environmental and Risk Prevention Strategic Evaluation – Executive Summary, 2005).
4. **Renewable energy:** Cyprus has a considerable number of sunny days, establishing it as a bright island with sunny and warm days for most of the year. Therefore, people will be able to use solar panel energy. Windmills also manage the wind, so that wind is used as electric or fuel substitutes. That is,

new energy resources and fresh energy investment, collaboration and close co-management between North Cyrus and South Cyprus institutions. In household users and in buildings and infrastructure, there is "no system for the correct use of energy and their technologies for the education.

5. **Hazardous management of trash:** There is no hazardous waste management system in North Cyprus. This is being actively discussed at the current, but investment in this field is needed. (Environment and Risk Prevention Strategic Assessment – Executive Summery, 2005)
6. **Biodiversity**: Cyprus has different Mediterranean habitats on marine and land which should be recognized in the near future, to protect and conserve the current communities of the wildlife of it. Also, Capacity building in specific sectors requires broader policy and research to detect lucrative ecosystems, whereby creating various buildings such as hotels and lounges or restaurants are developed and extension, presents substantial problems. These environmental problems need close collaboration and co-management between institutions and the Cyprus organization. Because of the first policy increased the population and attracted investors to expand the economy. Cyprus faces a difficult task by increasing population and by investing in natural resources such as land, the coast, and the forests. Here are some environmental challenges.

- **Policy and portion:** The island cause immigrants to enter the population due to the population overuse concerns.
- **More populous communities** require waste management, including solid waste from humans and animals, industrial testing, and other associated trash.

- **Water supply:** the unusually warm dry weather on both sides of Cyprus is caused by drinking water lake and a dearth of the ground and surface water. The rainfall has fallen significantly over recent years, which is why Cyprus has been exposed to desalt plants, dams, channels, pumping stations, tanks, irrigation networks, and boreholes. In southern and Northern Cyprus and other associations such as the EU the government is considering finding a settlement (Look at pictures in Appendix B).
- **Wastewater management:** absence of a wastewater collection and treatment program because of wastewater management shortcomings in Cyprus.
- **Municipal solid waste:** solid waste is one of Northern and southern Cyprus' greatest challenges. There is no instant waste treatment for diverse types: in Northern Cyprus people have made a huge amount of rubbish disposal by education tourists and other tourists. Disposal and plastic bags are a severe concern of groundwater pollution as well as for the landscape, which is so crucial for tourists' attraction, while travelers themselves underline the level of pollution on the land (Look at pictures in Appendix B)
- **Renewable energies:** Energy sources, such as rain, sunlight, wind, tides and geothermal heat are those energies that can be regenerated. Technologies for renewable energy include wind, hydroelectric, micro hydro, biomass, and transport biofuels. Some pollutants such as pollutants can be generated by renewable energy.
- **Air pollution:** Since the burning of fossil fuels, the atmosphere has been contaminated by toxic gases such as Mono Oxide Carbon, carbon dioxide, Nitrogen oxide, from the sculpture.

- **Construction policy:** Although explosive buildings, notably in the high-density tourist regions of Grine and Famagusta, have been completed over the last ten years, producing major environmental challenges and creating infrastructural bottlenecks, study on the Northern Cyprus construction sector has been rare (Yorucu & Keles, 2007). In his opinion, the unstable development movement has created the TRNC economy irregular fundamental and urban issues. As recently as not long ago, the arrangement creators did not consider the urban arrangement and the natural assurance (Look at pictures in Appendix B).

  In summary, TRNC's sustainable building strategy is a major challenge and a major contribution to national economies. However, in recent year in TRNC, without any regulation over building, land has been excessively used and green space is a problem.

- **Climate change:** TRNC, the outcome of a wide-ranging exchange of land that has brought the region exposed to global climate change in recent years because of hot spots based on results of global climate change models and rapid population expansion and land conversion. Reduction of greenhouse gas (GHG) emissions is a popular subject between researchers and scientists. Greenhouse Gas is one of the key climate change elements, scientists and researchers who are seeking a program to reduce the greenhouse gasses influence.

- **Nature & Biodiversity:** The world's most serious threats to nature are biological diversity and biodiversity. The country's most serious environmental challenges overuses of land sudden changing the weather, offensive varieties,

extended droughts, and also forest fires, illegal hunting, tourism, and mining all of contributing to the loss of biodiversity in Cyprus.

Furthermore, construction, such as rural road and highway development, causes habitat degradation and the fragmentation of wild regions.

- **Quality of contaminating the air:** In the air, all solid and liquid particles are harmful. This complex mixture of inorganic and organic particles includes pollen, dust, soot, smoke, and liquid droplets such as gasoline and wind dust. Because Cyprus is a windy island, it should take precautions to reduce PM emissions.
- **Using of Energy:** Both sides of Cyprus demand that the EU (European Union) establish new regulations in order to develop a plan to address the use of natural gas as a national energy system, which is the most efficient energy use.
- **Specific challenges:** the maritime sector on both sides of the Island is a key issue, and fisheries needs to establish a strategic framework to control and limit marine sources.

The Cyprus marine and coastal environment situation is rated from good to high environmental status based on the application of the water framework directive (2000/60/EC), physio-chemical parameters, and several surveillance programs, including the UNEP/MAP Med POL and Environmental Impact Assessments. Cyprus has completed Phase one of the Marine Strategy Framework Directive.

Agriculture is the opposite side of irrigation difficulty in the northern region of Cyprus, despite south.

Climate variability is related; high heat and insufficient rainfall in Cyprus affect crop productivity. Republic Cyprus has indicated in the recent past that it is comparing the future agricultural yields by almost 41 to 43% annually, which can lead to economic losses of up to 80 million euros every year (Chenoweth et al., 2011).

The eastern Mediterranean is known for its low productivity and oligotrophic (Azov 1991) conditions, and Cyprus is situated in a hot zone where temperatures rise and rainfall falls. Indeed, in recent years, Cyprus is endangered by desertification that has been characterized by overused ecosystems, which in turn causes population density to be exposed to climatic change. The other thing that affects seafarers is the low production in the area.

4.9 Northern Cyprus Environmental Institutions

The following are the differential institutions included before EM or environmental science as a multi-layer:

1. State (State of Env., Department of Forestry, Department of Agriculture and Environmental Management at local, national, and global levels):
2. Environmental non-governmental organizations (activity and involvement in influencing local, national, and global EM decisions) Earth Haribon's Greenpeace allies, for example (Philippines).
3. TCNs: Environmental activity and management at the local, national, and global levels in an individual way. Example: Matsui Siemens, Rio Tinto Zinc.
4. International financial institutions: activity and importance in influencing EM decisions locally, nationally, and globally). international financial institutions. Example: World Bank, Asian Development Bank International Monetary Fund.

5. Nomadic shepherds, farmers, and fisherman Cultivators shifting: Activity and self-aware environmental management on a local, national, and global scale. Farmers in the United Kingdom, for example. Farmers in the United Kingdom. Spanish fishermen, Buroro nomads (Africa).
6. Hunter-gatherers: local, national environment management activity and conscientious management, such as Penan (Malaysia) Yano (Brazil) (Wilson & Rough, 1997). Also, professional institutions, colleges, and universities face comparable challenges and nearly new problems that state communities should face as social institutions in the next six years. The main activities that have environmental implications are:
   - Dams, power stations, nuclear power plants
   - The plants
   - The towns
   - Highways (traffic, habitat segmentation)
   - Lines of Electric Transmission
   - Pipelines
   - Desalination
   - Vehicles
   - Ports
   - Agritourism and associated activities (fisheries, farms, etc.)

These are essential to the individual, but the consequences of these actions, how we handle them, and whose institutional structure is responsible for governance and control will be examined.

Chapter 5

METHODOLOGY AND RESULT

This chapter describes the strategy and method used to support the goals and answers the main research question on the possible contribution of ICZM to sustainable tourism development and sustainable conservation of coastal areas, considering the concept of coastal communities as a result of mass tourism in TRNC. Data was collected through a questionnaire, back translated to Turkish (eight villages near the Mediterranean Sea in Northern Cyprus) to investigate and analyze how the tourism industry is affecting the coastal area and communities. Finally, it ends with some obstacles during the research process. The quantitative (deductive) research style used in this study is based on a systematic and defined set of techniques to attempt to answer the research questions. A general framework for analyzing the sustainability of social-ecological systems. In quantitative research, based on the epistemological premise is that knowledge is relatively objective, for example, most individuals perceive the external world in the same manner which allows change in experiments to be attributed to changes in variables rather than individual views of the external world. This enables researchers to extrapolate and draw conclusions about the entire population from a selective sample (Creswell, 2002).

5.1 Respondents Profile

Since this study aims to investigate the perceptions of the residents regarding coastal areas in North Cyprus, respondents with experience of living in coastal areas were targeted. The respondents' profile is provided in Table 5.1 to 5.10.

Table 5.1: Descriptive Analysis for Gender

Items	Frequency	Percentage (%)
Female	109	43.4
Male	142	56.6
Total	251	100

In Table 5.1, the descriptive analysis for gender revealed that over half of the respondents (56.6 percent) were male and the rest were female (43.4 percent).

Table 5.2: Descriptive Analysis for Age

Items	Frequency	Percentage (%)
20–30	46	18.3
31–40	47	18.7
41–50	68	27.1
51–65	65	25.9
66–80	25	10.0
Total	251	100

The result of descriptive analysis for the age variable in Table 5.2 showed that the majority of the respondents were aged between 41 and 65 (53.0%).

Table 5.3: Descriptive Analysis for Marital Status

Items	Frequency	Percentage (%)
Single	79	31.5
Married	172	68.5
Total	251	100

The result of descriptive analysis for the marital status variable in Table 5.3 showed that the majority of the respondents were married (68.5%).

Table 5.4: Descriptive Analysis for Location

Items	Frequency	Percentage (%)
Bafra	26	10.4
Balalan	27	10.8
Dipkarpaz	44	17.5
Kaleburnu	29	11.6
Kaplica	22	8.8
Kumyali	26	10.4
Tatlisu	31	12.4
Yenierenkoy	46	18.3
Total	251	100

The result of descriptive analysis for the location variable in Table 5.4 showed that the respondents were fairly distributed from different locations. However, the majority of the respondents were from Yenierenkoy (18.3%) and the least ones from Kaplica (8.8%).

Table 5.5: Descriptive Analysis for Years of Residency

Items	Frequency	Percentage (%)
1–10 years	16	6.4
11–20 years	57	22.7
21–30 years	45	17.9
31–40 years	50	19.9
41–50 years	46	18.3
51–60 years	26	10.4
61 years and above	11	4.4
Total	251	100

In Table 5.5, illustrated the result of descriptive analysis for the years of residency variable that the majority of the respondents had 11-20 years of residency (22.7%). However, only 4.4 percent of the respondents were had more than 61 years of residency.

Table 5.6: Descriptive Analysis for Occupation

Items	Frequency	Percentage (%)
Self-employed	80	31.9
Full-time/governmental job	126	50.2
Total	251	100

The result of descriptive analysis for the gender variable in Table 5.6 showed that the majority of the respondents were civil servants (50.2%). Table 5.7 the total descriptive analysis for age, occupation, Martial , gender and the years for residency .

Table 5.7: Total Respondents' profile

Profile Category		Frequency (N = 251)	Percentage (%)
Gender	Female	109	43.4
	Male	142	56.6
Age	20–30	46	18.3
	31–40	47	18.7
	41–50	68	27.1
	51–65	65	25.9
	66–80	25	10.0
Marital Status	Single	79	31.5
	Married	172	68.5
Location	Bafra	26	10.4
	Balalan	27	10.8
	Dipkarpaz	44	17.5
	Kaleburnu	29	11.6
	Kaplica	22	8.8
	Kumyali	26	10.4
	Tatlisu	31	12.4
	Yenierenkoy	46	18.3
Residency years	1–10 years	16	6.4
	11–20 years	57	22.7
	21–30 years	45	17.9
	31–40 years	50	19.9
	41–50 years	46	18.3
	51–60 years	26	10.4
	61 years and above	11	4.4
Occupation	Self-employed	80	31.9
	Full-time/governmental job	126	50.2

5.2 Study Setting

At 420.55 km in length, the coast of North Cyprus is a dominant ecosystem. From a regional and socio-economic perspective, the coast, as a resource, plays significant role in the livelihood of the people (Farrell, 1986). Many local communities are economically dependent on marine and coastal resources that are the backbone of tourism in TRNC. The majority of the population of 326,000 lives in close proximity to the coast including the three main cities of Kyrenia, Gazimagusa, and Guzelyurt. A concentration of population along shorelines and coastal regions is not limited to island states. Small and Nicholls (2003, p. 584) highlighted that 'it is well known that the land areas adjacent to the world's shorelines are associated with large and growing concentrations of human population, settlements, and socioeconomic activities, including many of the world's large cities. This implies a high exposure to hazards and significant human-induced changes to a range of natural processes.'

With an area of 3355 Km2, North Cyprus has become an attractive Sun, Sea, and Sand (3S) tourism destination in the Eastern Mediterranean Region (Alipour et al., 2020). See also Figure 5.1 The number of tourist arrivals in North Cyprus reached 2,065,363 million in 2019, which generated 969.6 million USD. The ratio of net tourism income to trade balance amounted to 65.0 percent. The number of employees in the tourism sector registered at 18,988 (MTE (Ministry of Tourism and Environment), 2019). With over a 26,000-bed capacity and 153 tourism establishments, most of the five and four-star hotels are located in and around the shorelines by the prime beaches (MTE (Ministry of Tourism and Environment), 2019). During the past decade numerous second-home complexes have sprung up along the beaches, and the construction boom, notwithstanding the pandemic, is still active and growing (Yorucu, 2013) (city

planning officials, personal communication, September 2021). See also Table 2. The study focused on eight communities/villages: Bafra, Kumyali, Kaleburnu, Dipkarpaz, Yenierenkoy, Balalan, Kapkica, and Tatlisu (refer to Figure 4.3 chapter 4, and table 5.8). These sites were selected based on three criteria: first, they are spatially located in proximity to the coastal areas. This is significant in terms of 'everyday life orientations and how these could be used to develop mutual understandings of these areas as commons' (Vasstrøm, 2014, p. 494). Secondly, community members/residents are in constant interaction with the coastal resources and its environments. Third, community members possess local knowledge and useful insights about the changes and developments that have taken place in coastal areas. It is assumed 'that local users and participants have time- and place-specific knowledge, and the ability to form regulatory collective institutions with enforcement mechanisms' (Vasstrøm, 2014, p. 499). See also Table 5.8

Table 5.8: Tourism movement in North Cyprus

Year / **Monthly Arrivals**	**2016**	**2017**	**2018**	**2019**
January	108.161	122.291	139.359	123.287
February	147.520	155.236	168.989	154.780
March	138.498	162.149	167.829	150.903
April	143.323	167.797	182.009	169.809
May	168.303	174.667	168.254	154.725
June	143.658	157.196	162.914	174.626
July	168.482	189.322	193.970	188.065
August	173.712	186.160	189.790	201.509
September	203.198	221.587	222.430	224.780
October	181.529	189.854	179.978	203.548
November	144.593	161.796	158.688	171.546
December	141.781	156.959	145.754	151.414
Total	1862.558	2045.014	2079.961	2068.992

Source: MTE(2019).

Table 5.9: Surveyed coastal villages

No.	Names	Population	Number of Households
1	Kumyali	710	236.7
2	Kaleburnu	372	124
3	Tatlisu	1379	459.7
4	Balalan	102	34
5	Kaplica	411	137
6	Dipkarpaz	2026	675.33
7	Yenierenkoy	8091	2697
8	Bafra	662	220.7

Source: KKTC 2006 General Population and Consumption Number Personal Results, 2006.

5.3 Survey Instrument and Data Collection

A survey questionnaire was designed to collect data from community members in each village. Socio-demographic data were obtained on age in years (continuous), gender (male and female), length of residence in their current village in years (continuous), marital status (single and married), location of residency (for the purpose of number of surveyed respondents in each village), and occupation. Information was gathered by applying a five-point Likert scale ("1 = strongly agree"; "5 = strongly disagree"). The survey was developed in English, and then, by using the back-translation method, it was translated to Turkish Mc Gorry, 2000), which is in line with previous studies (Alipour et al., 2019; Safaeimanesh et al., 2021). The data collection process was carried out over three months from 27 January to April 2021.

The measurement instrument consisted of three dimensions: environmental (comprised of 15 items); institutional (comprised of 13 items); and tourism development and ICZM (comprised of 12 items). The measurement items gleaned from relevant sources and studies (Ballinger et al., 2010; Berkes, 2007; Evaluation of

Integrated Coastal Zone Management (ICZM) in Europe, 2006; Farrell, 1986; Few, 2000; Friesinger & Bernatchez, 2010; Ostrom, 2000; Ovitz & Johnson, 2019; Perry et al., 2014; Phillips & Jones, 2006; Sorensen, 2002).

The measurement instrument was subjected to a pilot study to provide us with an opportunity to adjust if necessary (van Teijlingen & Hundley, 2001). For this purpose, we contacted two academics, two village teachers, two fishermen, and two farmers from the studied communities.

The result of the pilot study 248 indicated the adequacy and clarity of research instruments. In total, 251 survey questionnaires were distributed to the head of the households among the eight villages that were surveyed. The distribution of survey questionnaires was conducted by the drop-off/pick-up method. This was carried out through the village chief who is a trustworthy person among the villagers. He performed the distribution among the households within the study communities.

Table 5.10: List of Scale's Items

Variable	Label
Environmental Dimension	
Since I have been living here, I have witnessed the decline in the quality of the coastal areas due to pollution and contamination.	ED_1
Since I have been living here, I have witnessed land erosion along the coastal areas.	ED_2
I have noticed an acceleration of the phenomenon of erosion since I resided here.	ED_3
Nowadays beaches and coastal areas are more polluted.	ED_4
The main cause of erosion and pollution is humans.	ED_5
The main cause of pollution and erosion is haphazard development.	ED_6
Most of the sewers from households are unfiltered and end in the Sea.	ED_7

Holiday home construction is the cause of coastal pollution.	ED_8
Desalination plants contribute to the pollution of coastal areas.	ED_9
Existing marinas are not following any guidelines for protection of the beach.	ED_10
Existing accommodation sector contributes to coastal pollution.	ED_11
Construction firms have to follow strict rules and regulations to protect the quality of environment in coastal areas.	ED_12
Coastal areas are special ecosystems, and they require an adaptive strategy such as ICZM (integrated coastal zone management).	ED_13
Coastal residents are aware of coastal zone conservation programs.	ED_14
Coastal residents and communities have knowledge of support how to protect the coast against discharge and waste.	ED_15
Institutional Issues	
Government should be responsible for the management of coastal areas.	II_1
Government has no program for the protection of the coastal zone.	II_2
There is close relationship between local government and national government towards coastal management.	II_3
There are strict laws and regulations regarding coastal zone management.	II_4
Government has strong monitoring system regarding the coastal zone protection.	II_5
Government facilitates and invites community residents to participate and be involved in integrated coastal zone management.	II_6
Nongovernmental organizations (NGOs) are actively involved in coastal zone management.	II_7
There is close cooperation and collaboration between NGOs and institutions responsible for coastal zone.	II_8
Coastal residents are always invited to be involved in coastal zone management policies and plans.	II_9
Construction developers have the power to influence coastal zone development projects.	II_10
Public institutions are in close cooperation and collaboration to achieve the protection and management of coastal areas.	II_11

Coastal residents have been informed about integrated coastal zone management (ICZM).	II_12
Government has established a formidable ICZM (integrated coastal zone management) in North Cyprus.	II_13
Tourism development and ICZM (integrated coastal zone management)	
Coastal zones and beaches are the main attractions for mass tourism.	TIM_1
Coastal residents and communities are the main beneficiaries of coastal tourism known as sun, sea, and sand tourism.	TIM_2
Tourism activities are the main cause of coastal damage in North Cyprus.	TIM_3
Accommodation sector managers have received special training in how to protect the coast.	TIM_4
Tourists receive special orientation to respect the coastal ecosystems.	TIM_5
Coastal residents are given opportunities to participate in coastal tourism management and monitoring.	TIM_6
Coastal residents and communities are aware of sustainable coastal tourism.	TIM_7
Tourism has caused the depletion of marine life and fish stock.	TIM_8
The tourism accommodation development is in violation of the principles of ICZM (integrated coastal zone management).	TIM_9
Tourism development along the coastal areas has affected the culture and lifestyle of coastal communities in a positive way.	TIM_10
Coastal residents are in close contact with tourism establishments in the coastal areas.	TIM_11
There is a close cooperation between coastal residents and tourism sector.	TIM_12

5.4 Sampling

In this study, a purposive sampling was utilized, which is a non-probability sampling method. ‘In purposive sampling, sites, like organizations, and people (or whatever the unit of analysis is) within sites are selected because of their relevance to the research

questions' (Bryman, 2012, p. 418). We were clear about the criteria and their relevancy to the inclusion of coastal community members as units of analysis.

Since this study aims to investigate the perceptions of the residents regarding coastal areas in North Cyprus, respondents with experience of living in coastal areas were targeted.

The sample size of a population of less than 10000 units (in this case 4548 as the number of heads of household) can be calculated as an equation based on the confidence level "1-α" (Özdamar, 2013).

$$n = \frac{N \times t^2 \times p \times q}{d^2 \times (N-1) + t^2 \times p \times q}$$

Where n is the sample size, N is the number of populations, t is the distribution of critical values (1.96 or 5% error), p is the population percentage (expected prevalence, percentage of 1), q Is the expected non-prevalence (1-p), d is the degree of accuracy and is usually set to 0.05 (called the ratio).

Applying the formula gives the following results:

$$n = \frac{4548 \times 1.96^2 \times 0.5 \times 0.5}{0.05^2 \times (4548-1) + 1.96^2 \times 0.5 \times 0.5} = 354$$

Therefore, the recommended minimum sample size is 354, which is smaller than the number of questionnaires 251 filled out as the sample size for this survey. This is because the situation in Covid-19 makes it unavailable to respondents. However, when we reach the saturation stage in terms of collecting data from the head of household rather than the individual and then getting the same new ideas from the head of household, we find that collecting more than 100 respondents gives the same results. is showing. This is why this sample size is suitable for the purpose of this study.

Respondents voluntarily participated in this research and were assured about their anonymity and confidentiality beforehand. The respondents' profile is provided in Table 5.4 The result of descriptive analysis for the gender variable that the majority of the respondents were male (56.6%) and married (68.5%). The majority of the respondents were aged between 41 and 65 (53.0%). The majority of the respondents were civil servants (50.2%). The results of cross tabulation between location and age, gender, and marital status are shown in Table 5.4 These results showed that the majority of the respondents of the Kumyali (65.4) and Yenierenkoy (58.7%) were female, while for the Balalan (77.8%), Dipkarpaz (77.3%), Kaplica (63.6%), and Bafra (57.7%), the majority were male. However, for other areas (Kaleburnu and Tatlisu), they were almost equally male and female.

Table 5.11 : Cross Tabulation between Location and Gender, Marital Status, and Age

Location	Gender		Marital Status		Age					Total
	Female	Male	Single	Married	20–30	31–40	41–50	51–65	66–80	
Bafra	11 (42.3)	15 (57.7)	9 (34.6)	17 (65.4)	8 (30.8)	5 (19.2)	6 (23.1)	5 (19.2)	2 (7.7)	26
Kumyali	17 (65.4)	9 (34.6)	8 (30.8)	18 (69.2)	8 (30.8)	2 (7.7)	9 (34.6)	4 (15.4)	3 (11.5)	26
Kaleburnu	15 (51.7)	14 (48.3)	10 (34.5)	19 (65.5)	4 (13.8)	3 (10.3)	8 (27.6)	10 (34.5)	4 (13.8)	29
Tatlisu	15 (48.4)	16 (51.6)	8 (25.8)	23 (74.2)	6 (19.4)	6 (19.4)	13 (41.9)	5 (16.1)	1 (3.2)	31
Balalan	6 (22.2)	21 (77.8)	10 (37.0)	17 (63.0)	5 (18.5)	6 (22.2)	4 (14.8)	8 (29.6)	4 (14.8)	27
Kaplica	8 (36.4)	14 (63.6)	10 (45.5)	12 (54.5)	4 (18.2)	6 (27.3)	6 (27.3)	4 (18.2)	2 (9.1)	22
Dipkarpaz	10 (22.7)	34 (77.3)	13 (29.5)	31 (70.5)	7 (15.9)	11 (25)	14 (31.8)	9 (20.5)	3 (6.8)	44
Yenierenkoy	27 (58.7)	19 (41.3)	11 (23.9)	35 (76.1)	4 (8.7)	8 (17.4)	8 (17.4)	20 (43.5)	6 (13.0)	46
Total	109 (43.4)	142 (56.6)	79 (31.5)	172 (68.5)	46 (18.3)	47 (18.7)	68 (27.1)	65 (25.9)	25 (10)	251

Note: the values in parentheses are the percentages

Table 5.12 : Cross Tabulation between Location and Years of Residency

Location	1 - 10 years	11 - 20 years	21 -30 years	31 - 40 years	41 - 50 years	51 - 60 years	61 and above	Total
Bafra	8 (30.8)	5 (19.2)	4 (15.4)	4 (15.4)	3 (11.5)	1 (3.8)	1 (3.8)	26
Kumyali	1 (3.8)	9 (34.6)	6 (23.1)	4 (15.4)	6 (23.1)	0 (0)	0 (0)	26
Kaleburnu	2 (6.9)	8 (27.6)	3 (10.3)	6 (20.7)	7 (24.1)	1 (3.4)	2 (6.9)	29
Tatlisu	0 (0)	9 (29.0)	3 (9.7)	11 (35.5)	5 (16.1)	2 (6.5)	1 (3.2)	31
Balalan	1 (3.7)	2 (7.4)	4 (14.8)	6 (22.2)	8 (29.6)	4 (14.8)	2 (7.4)	27
Kaplica	0 (0)	5 (22.7)	5 (22.7)	6 (27.3)	4 (18.2)	2 (9.1)	0 (0)	22
Dipkarpaz	2 (4.5)	7 (15.9)	10 (22.7)	6 (13.6)	10 (22.7)	7 (15.9)	2 (4.5)	44
Yenierenkoy	2 (4.3)	12 (26.1)	10 (21.7)	7 (15.2)	3 (6.5)	9 (19.6)	3 (6.5)	46
Total	16 (6.4)	57 (22.7)	45 (17.9)	50 (19.9)	46 (18.3)	26 (10.4)	11 (4.4)	251

Note: the values in parentheses are the percentages.

The results of cross tabulation between location and years of residency is shown in Table 6.10. The results showed that the majority of the respondents of the Kumyali (34.6), Kaleburnu (27.6%), Tatlisu (29.0%), and Yenierenkoy (26.1%) were aged between 11 and 20 years, while for the Bafra (30.8%), Dipkarpaz (22.7%), Kaplica (27.3%), Balalan (29.6%), the majority were aged 1-10 years, 21-30 years, 31-40 years, and 41-50 years, respectfully.

5.5 Data Analysis

The data analysis process was conducted using the IBM SPSS 25.0 program, which consisted of data screening, reliability analysis, descriptive and frequency analysis, t-test, and one-way ANOVA, as well as post hoc analysis of Scheffe (Midway et al., 2020). Therefore, data were summarized in order to obtain the best interpretation. The data screening was started by exploring the missing values in rows and columns. There were no rows with over 20%missing data. No outliers were found. We observed 3 missing values in the II_9 and TIM_6 variables.

We looked at the surrounding values of the other indicators for the II_9 and TIM_6 variables, and we used the mode value for respondents to estimate the missing values. In terms of the normality of the data, the dataset was checked for skewness and kurtosis. The values of skewness ranged from ± 0.666 to 1.750, and for kurtosis, the values ranged from ± 1.258 to 1.758 except for the TIM_1 variable (3.049). Therefore, we observed normal distributions for all the variables, as suggested by Sposito et al. (1983) who recommend ±3.3 as the upper threshold for normality, which is in line with previous studies (Alipour et al., 2021; Safaeimanesh et al., 2021). For the details, see Table A1/Appendix A. A t-test for comparing two groups and a one-way ANOVA for comparing more than two groups were used to compare the differences in the variables between the groups. In addition, Scheffe's post hoc test was applied to find means that are significantly different from each other between the groups of variables. Both Tukey's HSD and Scheffe's post hoc test are used for pairwise comparison among the group means (Keselman & Rogan, 1978); however, Scheffe's post hoc test is used with unequal group sample sizes in and is more conservative (for more information see Kasselman & Rogan (1978); Scheffe (1999).

5.6 Result

The result of reliability for all the scale variables is presented in Table 5.13 Three items from ED (ED_13, ED_14, and ED_15), two items from II (II_1 and II_2), and two items from TIM (TIM_1 and TIM_10) were removed due to the low corrected item-total correlation.

This is because corrected item-total correlation values greater than 0.3 are acceptable (Field, 2018, p. 1050). The removed items were eliminated from the rest of the analysis. The Cronbach alpha (values ranged between 0.848 and 0.908 and were greater than 0.7, as the threshold (Bagozzi & Yi, 2012).

Table 5.13 : Reliability of the Scale Variables

Items		Corrected Item-Total Correlation	Cronbach Alpha (α)
Environmental Dimension			0.849
ED_1	Since I have been living here, I have witnessed the decline in the quality of the coastal areas due to pollution and contamination.	0.465	
ED_2	Since I have been living here, I have witnessed land erosion along the coastal areas.	0.636	
ED_3	I have noticed an acceleration of the phenomenon of erosion since I resided here.	0.537	
ED_4	Nowadays beaches and coastal areas are more polluted.	0.546	
ED_5	The main cause of erosion and pollution is humans.	0.530	
ED_6	The main cause of pollution and erosion is haphazard development.	0.494	
ED_7	Most of the sewers from households are unfiltered and end in the Sea.	0.419	
ED_8	Holiday home construction is the cause of coastal pollution.	0.619	
ED_9	Desalination plants contribute to the pollution of coastal areas.	0.467	
ED_10	Existing marinas are not following any guidelines for protection of the beach.	0.485	
ED_11	Existing accommodation sector contributes to coastal pollution.	0.590	
ED_12	Construction firms have to follow strict rules and regulations to protect the quality of environment in coastal areas.	0.386	

Items		Corrected Item-Total Correlation	Cronbach Alpha (α)
ED_13	Coastal areas are special ecosystems, and they require an adaptive strategy such as ICZM (integrated coastal zone management).	-	
ED_14	Coastal residents are aware of coastal zone conservation programs.	-	
ED_15	Coastal residents and communities have knowledge of support how to protect the coast against discharge and waste.	-	
Institutional Issues			0.908
II_1	Government should be responsible for the management of coastal areas.	-	
II_2	Government has no program for the protection of the coastal zone.	-	
II_3	There is close relationship between local government and national government towards coastal management.	0.351	
II_4	There are strict laws and regulations regarding coastal zone management.	0.607	
II_5	Government has strong monitoring system regarding the coastal zone protection.	0.741	
II_6	Government facilitates and invites community residents to participate and be involved in integrated coastal zone management.	0.782	
II_7	Nongovernmental organizations (NGOs) are actively involved in coastal zone management.	0.635	
II_8	There is close cooperation and collaboration between NGOs and institutions responsible for coastal zone.	0.788	
II_9	Coastal residents are always invited to be involved in coastal zone management policies and plans.	0.757	
II_10	Construction developers have the power to influence coastal zone development projects.	0.353	
II_11	Public institutions are in close cooperation and collaboration to achieve the protection and management of coastal areas.	0.735	
II_12	Coastal residents have been informed about integrated coastal zone management (ICZM).	0.770	
II_13	Government has established a formidable ICZM (integrated coastal zone management) in North Cyprus.	0.693	
Tourism development and ICZM (integrated coastal zone management)			0.848
TIM_1	Coastal zones and beaches are the main attractions for mass tourism.	-	
TIM_2	Coastal residents and communities are the main beneficiaries of coastal tourism known as sun, sea, and sand tourism.	0.328	
TIM_3	Tourism activities are the main cause of coastal damage in North Cyprus.	0.439	
TIM_4	Accommodation sector managers have received special training in how to protect the coast.	0.613	
TIM_5	Tourists receive special orientation to respect the coastal ecosystems.	0.703	
TIM_6	Coastal residents are given opportunities to participate in coastal tourism management and monitoring.	0.718	
TIM_7	Coastal residents and communities are aware of sustainable coastal tourism.	0.576	
TIM_8	Tourism has caused the depletion of marine life and fish stock.	0.533	
TIM_9	The tourism accommodation development is in violation of the principles of ICZM (integrated coastal zone management).	0.373	
TIM_10	Tourism development along the coastal areas has affected the culture and lifestyle of coastal communities in a positive way.	-	
TIM_11	Coastal residents are in close contact with tourism establishments in the coastal areas.	0.604	
TIM_12	There is a close cooperation between coastal residents and tourism sector.	0.581	

Note: (-) removed items due to the low corrected item-total correlation.

In this study, the 5-point Likert scale was utilized. According to Balcı (2004), if the average of each question for all the respondents is between 1 and 1.79, it can be considered that they strongly agreed with that specific question. When it ranges from 1.80 to 2.59, it can be thought as agreement, 2.60 to 3.39 as undecided, 3.40 to 4.19 as disagreement, and 4.20 to 5 as strong disagreement. After calculating the attitude score based on Balcı's (2004) recommendation, the results revealed that respondents almost agreed with all of the items of the ED variable, except for ED_12, with which their attitudes were strongly agreed. For the II variables, most of the respondents were

undecided about the items, except for II_10 (agree) and II_13 (disagree). Except for TIM_2 (agree), the respondents were shown to be undecided for all of the items of the TIM variable. By taking the average of the ED, II, and TIM variables, the results showed that respondents agreed with the ED variables; however, they were undecided about the II and TIM variables. For the details, see Table 5.14.

Table 5.13: Descriptive Statistics of Scale Variables of questionnaire Items

Variable	Mean	Median	Mode	Std. Dev.	Min	Max	Attitude Scale
ED1	2.29	2.00	2	1.200	1	5	Agree
ED2	2.41	2.00	2	1.068	1	5	Agree
ED3	2.45	2.00	2	1.051	1	5	Agree
ED4	2.02	2.00	1	1.039	1	5	Agree
ED5	2.08	2.00	1	1.139	1	5	Agree
ED6	2.22	2.00	2	1.162	1	5	Agree
ED7	2.42	2.00	2	1.094	1	5	Agree
ED8	2.33	2.00	2	1.165	1	5	Agree
ED9	2.35	2.00	2	1.102	1	5	Agree
ED10	2.33	2.00	3	0.998	1	5	Agree
ED11	2.40	2.00	2	1.180	1	5	Agree
ED12	1.78	1.00	1	1.027	1	5	Strongly Agree
ED13 *	1.90	2.00	2	0.937	1	5	-
ED14 *	2.73	3.00	2	1.183	1	5	-
ED15 *	2.79	3.00	2	1.271	1	5	-
Mean ED	2.258 **						Agree
II1	1.79	1.00	1	1.127	1	5	-
II2	2.43	2.00	3	1.138	1	5	-
II3	2.78	3.00	2	1.270	1	5	Undecided
II4	2.95	3.00	3	1.256	1	5	Undecided
II5	3.20	4.00	4	1.294	1	5	Undecided
II6	3.14	3.00	4	1.210	1	5	Undecided
II7	3.02	3.00	4	1.290	1	5	Undecided

II8	3.08	3.00	4	1.245	1	5	Undecided
II9	3.04	3.00	4	1.244	1	5	Undecided
II10	2.32	2.00	2	1.178	1	5	Agree
II11	3.20	3.00	4	1.182	1	5	Undecided
II12	3.27	4.00	4	1.289	1	5	Undecided
II13	3.53	4.00	4	1.389	1	5	Disagree
Mean II	3.047 **						Undecided
TIM1	1.66	1.00	1	0.947	1	5	-
TIM2	2.18	2.00	2	1.064	1	5	Agree
TIM3	2.88	3.00	4	1.324	1	5	Undecided
TIM4	3.14	4.00	4	1.389	1	5	Undecided
TIM5	3.24	4.00	4	1.317	1	5	Undecided
TIM6	3.29	4.00	4	1.236	1	5	Agree
TIM7	2.79	3.00	4	1.213	1	5	Undecided
TIM8	2.93	3.00	4	1.200	1	5	Undecided
TIM9	2.94	3.00	3	1.135	1	5	Undecided
TIM10	2.24	2.00	2	1.046	1	5	-
TIM11	2.81	3.00	2	1.185	1	5	Undecided
TIM12	2.88	3.00	2	1.273	1	5	Undecided
Mean TIM	2.908 **						Undecided

Note: * removed items during reliability test. ** The average of the means except for the removed items; Std. Dev. = Standard Deviation.

In order to investigate the influence of gender, age, location, and years of residency on residents' perceptions regarding all the variables, the t-test and ANOVA were utilized. The mean scores, which were measured on a Likert scale from 1 = strongly agree to 5 = strongly disagree, were used for the ranking. The results are presented in Tables 5.13 and 5.14. Moreover, the post hoc analysis of Scheffe was implemented to explore differences invariable between the subgroups of related variables.

Table 5.15: Comparing Means of all the Variables and Gender

Items	t-Value	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference
ED_1	0.409	249	0.683	0.063	0.153
ED_2	0.338	249	0.736	0.046	0.136
ED_3	−0.493	249	0.623	−0.066	0.134
ED_4	0.538	249	0.591	0.071	0.132
ED_5	1.946	249	0.053	0.281	0.144
ED_6	−1.242	249	0.215	−0.184	0.148
ED_7	−0.302	249	0.763	−0.042	0.140
ED_8	−1.051	249	0.294	−0.156	0.148
ED_9	−1.349	249	0.179	−0.189	0.140
ED_10	−0.332	249	0.740	−0.042	0.127
ED_11	−0.631	249	0.528	−0.095	0.151
ED_12	−0.953	249	0.342	−0.125	0.131
II_3	1.641	249	0.102	0.265	0.161
II_4	2.212	249	0.028 *	0.351	0.159
II_5	3.192	249	0.002 **	0.517	0.162
II_6	3.417	249	0.001 **	0.516	0.151
II_7	2.623	249	0.009 **	0.426	0.162
II_8	2.257	249	0.025 *	0.355	0.157
II_9	2.705	249	0.007 **	0.423	0.156
II_10	1.389	249	0.166	0.208	0.150
II_11	2.808	249	0.005 **	0.417	0.149
II_12	2.384	249	0.018 *	0.388	0.163
II_13	0.899	249	0.370	0.159	0.177
TIM_2	−0.304	249	0.762	−0.041	0.136
TIM_3	−0.189	249	0.850	−0.032	0.169
TIM_4	3.843	249	0.000 ***	0.662	0.172
TIM_5	4.081	249	0.000 ***	0.664	0.163
TIM_6	2.745	249	0.006 **	0.426	0.155
TIM_7	2.009	249	0.046 *	0.308	0.154
TIM_8	−0.702	249	0.484	−0.107	0.153
TIM_9	−1.631	249	0.104	−0.235	0.144
TIM_11	1.383	249	0.168	0.208	0.151
TIM_12	−0.353	249	0.724	−0.057	0.162

Notes: Sig. = Significant; df = degree of freedom; std. = standard. * = The mean difference is significant at the $p \leq 0.05$ level; ** = The mean difference is significant at the $p \leq 0.01$ level; *** = The mean difference is significant at the $p \leq 0.001$ level.

Table 5.14: Comparing Means of all the Variables and Age, Years of Residency, Occupation, and Location.

Items	Age			Years of Residency			Occupation			Location		
	F	Sig.	Scheffe	*F*	Sig.	Scheffe	*F*	Sig.	Scheffe	*F*	Sig.	Scheffe
ED_1	2.154	0.075		1.062	0.386		1.664	0.191		3.664	0.001 **	
ED_2	0.626	0.644		1.029	0.407		1.224	0.296		1.449	0.186	
ED_3	1.794	0.131		1.527	0.170		0.849	0.429		1.907	0.069	
ED_4	2.645	0.034 *		0.819	0.556		2.121	0.122		1.126	0.348	
ED_5	0.833	0.505		1.861	0.088		0.113	0.893		2.486	0.018 *	
ED_6	2.356	0.054		2.080	0.056		1.272	0.282		0.337	0.936	
ED_7	1.299	0.271		0.409	0.873		0.439	0.645		2.032	0.052	
ED_8	0.917	0.454		1.288	0.263		0.306	0.736		1.051	0.396	
ED_9	1.987	0.097		1.753	0.109		0.599	0.550		0.492	0.840	
ED_10	0.450	0.773		2.245	0.040 *		0.834	0.435		0.779	0.605	
ED_11	0.535	0.710		2.975	0.008 **		4.376	0.014 *	[3] > [2]	1.024	0.415	
ED_12	1.360	0.248		2.777	0.012 **		2.533	0.082		0.670	0.697	
II_3	1.246	0.292		1.718	0.117		0.719	0.488		0.695	0.676	
II_4	0.608	0.657		2.711	0.014 **		0.972	0.380		1.744	0.100	
II_5	1.700	0.151		1.975	0.070		2.213	0.112		2.176	0.037	
II_6	2.505	0.043 *		2.091	0.055		3.640	0.028 *	[3] > [1]	2.788	0.008 **	
II_7	1.289	0.275		0.875	0.514		1.058	0.349		5.356	0.000 ***	«2»«6» > «7»
II_8	1.046	0.384		1.874	0.086		0.076	0.927		2.807	0.008 **	
II_9	1.766	0.136		2.297	0.036 *		0.953	0.387		4.196	0.000 ***	«2»«4» > «7»
II_10	5.984	0.000 ***	(4) > (1)(3)(5)	2.899	0.010 *		0.142	0.868		1.555	0.150	
II_11	1.942	0.104		2.706	0.015 *		0.408	0.666		2.006	0.055	
II_12	1.335	0.257		1.432	0.203		0.484	0.617		2.097	0.045 *	
II_13	1.632	0.167		1.030	0.406		0.173	0.841		3.316	0.002 **	«6» > «7»
TIM_2	0.330	0.858		0.800	0.571		2.563	0.079		2.045	0.050	
TIM_3	0.967	0.426		0.301	0.936		0.971	0.380		3.928	0.000 ***	«6»«2» > «7»
TIM_4	2.494	0.044 *		3.406	0.003 **		0.278	0.757		3.287	0.002 **	«5» > «7»
TIM_5	2.653	0.034 *		3.606	0.002 **	{1} > {6}	0.095	0.909		2.715	0.010 *	
TIM_6	1.890	0.113		3.518	0.002 **	{2} > {6}	0.262	0.770		3.789	0.001 **	«5»«8» > «7»
TIM_7	2.513	0.042 *		2.184	0.045 *		2.797	0.063		5.295	0.000 ***	«5»«8» > «6»
TIM_8	2.374	0.053		1.630	0.139		0.694	0.501		2.083	0.046 *	
TIM_9	1.815	0.126		1.670	0.129		0.343	0.710		1.571	0.145	
TIM_11	3.478	0.009 **	(4) > (3)(1)	2.697	0.015 *		0.566	0.568		1.411	0.201	
TIM_12	5.046	0.001 **	(4) > (3)(1)	0.969	0.447		0.551	0.577		1.789	0.090	

Notes: Sig. = Significant; F = *F*-value; * = $p \leq 0.05$ level; ** = $p \leq 0.01$ level; *** = $p \leq 0.001$ level. (1), (2), (3), (4), and (5) represent the mean score of age ranging 20–30, 31–40, 41–50, 51–65, and 66–80, respectively. [1], [2], and [3] represent the mean score of Self-employed, Governmental job, and Unemployed, respectively. {1}, {2}, {3}, {4}, {5}, {6}, {7} represent the years of residency ranging 1–10, 11–20, 21–30, 31–40, 41–50, 51–60, and 61 years and above, respectively. «1», «2», «3», «4», «5», «6», «7», and «8» represent the locations of Bafra, Kumyali, Kaleburnu, Tatlisu, Balalan, Kaplica, Dipkarpaz, and Yenierenkoy, respectively.

The result of the independent samples t-test in Table 5.16 has shown that there is a statistically significant difference between the male and female respondents in only the means of II_4 to 9, II_11, II_12, and TIM_4 to 7 variables. The results showed that the mean for these variables was greater for female respondents than for males. These results revealed that males were more agreed about II_4, 5, 6, 7, 8, and 9 variables (mean = 2.796, 2.979, 2.915,2.831, 2.930, and 2.852, respectively) than females (mean = 3.147, 3.495, 3.431, 3.257, 3.284, and 3.275, respectively). Moreover, males were shown to be more agreed or neutral about the TIM_4, 5, 6, and

7 variables (mean = 2.852, 2.951, 3.106, 2.655, respectively) than females (mean = 3.514, 3.615, 3.532, and 2.963, respectively).

Differences between the perceptions of residents by different age levels, years of residency, occupation, and location of the residents were verified using one-way ANOVA. The results are presented in Table 5.16, which shows that there were significant differences in community members' perception of the ED_4, II_6, II_10, TIM_4, TIM_5, TIM_7, TIM_11, and TIM_12 variables regarding their age levels. There is also a significant difference in the ED_10 to 12, II_4, II_9 to 11, TIM_4 to 7, and TIM_11 variables regarding the years of residency. In addition, there were significant differences in community members' perception of the ED_11 and II_6 variables regarding their occupation. In addition, there is a significant difference in the ED_1, ED_5, II_6 to 9, II_12 to 13, and TIM_3 to 8 variables regarding the community members' locations. In order to find out which pairs of means are significantly different from each other between the groups of variables, Scheffe's post hoc test was utilized.

The results of Scheffe's post hoc test in Table 5.16 showed that, for the II_10, TIM_11, and TIM_12 variables, there is a main effect for age levels ($F = 5.984$, 3.478, and 5.046, $p < 0.01$), due to residents with ages ranging 51–65 scoring higher than those with ages ranging 20–30, 41–50, and 66–80 (only for II_10). The results showed that the mean for these variables was greater for respondents with ages ranging 51–65 than for others. These results revealed that residents with ages ranging 66–80 (mean = 1.800, only for II_10), 41–50 (mean = 2.103, 2.632, and 2.588, respectively), and 20–30 (mean = 2.130, 2.565, and 2.413, respectively) were more agreed about the II_10, TIM_11, and TIM_12 variables than residents age ranging 51–65 (mean = 2.862,

3.262, and 3.38, respectively). These results also revealed that residents with ages ranging 66–80 were the most agreed about the II_10 variable.

The results of Scheffe's post hoc test in Table 5.16 showed that, for the TIM_5 and TIM_6 variables, there is a main effect for years of residency ($F = 3.606$ and 3.518, $p < 0.01$), due to those with residency years ranging 1–10 and 11–20 (for TIM_5 and TIM_6, respectively) scoring higher than those with residency years ranging 51–60. These results revealed that residents with 1 to 10 and 11 to 20 years of residence (mean = 4.188 and 3.772, respectively) were more disagreed about the TIM_5 and TIM_6 variables than residents with 51 to 60 years of residence (mean = 2.538 and 2.615, respectively).

The results of Scheffe's post hoc test in Table 5.16 showed that, for the ED_11 and II_6 variables, there is a main effect for the resident's occupation ($F = 4.376$ and 3.640, $p < 0.05$), due to the unemployed residents scoring higher than residents with full-time/governmental jobs and self-employed residents (for ED_11 and II_6, respectively). These results revealed that residents with full-time/governmental jobs and self-employed residents (mean = 2.246 and 2.863, respectively) were more agreed about ED_11 and II_6 variables than unemployed residents (mean = 2.844 and 3.422, respectively).

The results of Scheffe's post hoc test in Table 5.16 showed that, for the II_7, II_9, II_13, TIM_3, TIM_4, TIM_6, and TIM_7 variables, there is a main effect for resident's location ($F = 5.356$, 4.196, 3.316, 3.928, 3.287, 3.789, and 5.295, $p < 0.01$ or better). This is because the residents of Kumyali, Tatlisu, Balalan, and Kaplica scored higher than the residents of Dipkarpaz, and the residents of Balalan and

Yenierenkoy scored higher than the residents of Kaplica. These results revealed that the residents of Dipkarpaz (mean = 2.364, 2.341, 2.886, 2.250, 2.318, and 2.545, respectively) and Kaplica (mean = 1.909, only for TIM_7) were more agreed about the II_7, II_9, II_13, TIM_3, TIM_4, TIM_6, and TIM_7 variables than the residents of Kaplica and Kumyali (mean = 3.682 and 3.692, respectively, for II_7). Furthermore, for residents of Tatlisu and Kumyali, the mean = 3.452 and 3.615, respectively, for II_9; for residents of Kumyali, the mean = 3.615, for II_13; for residents Kumyali and Kaplica, the mean = 3.538 and 3.545, respectively, for TIM_3. In addition, for residents of Balalan, the mean = 3.630, for TIM_4; for residents of Yenierenkoy and Balalan, the mean = 3.543 and 3.815, respectively, for TIM_6; for residents of Yenierenkoy and Balalan, the mean = 3.239 and 3.444, respectively, for TIM_7.

In terms of the normality of the data, the dataset was checked for skewness and kurtosis. The values of skewness ranged from −0.666 to 1.750, and for kurtosis, the values ranged from −1.258 to 1.758 except for the TIM_1 variable (3.049). Therefore, we observed normal distributions for all the variables, as suggested by Sposito et al. (1983) who recommend ±3.3 as the upper threshold for normality, which is in line with previous studies (Alipour et al., 2021; Safaeimanesh et al., 2021). For the details, see Table 5.17.

Table 5.15: Normality of the Variables

Variable	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
ED1	0.646	0.154	-0.601	0.306
ED2	0.603	0.154	-0.306	0.306
ED3	0.435	0.154	-0.391	0.306
ED4	0.901	0.154	0.189	0.306

ED5	0.874	0.154	-0.215	0.306
ED6	0.929	0.154	0.116	0.306
ED7	0.571	0.154	-0.256	0.306
ED8	0.625	0.154	-0.432	0.306
ED9	0.763	0.154	0.021	0.306
ED10	0.304	0.154	-0.449	0.306
ED11	0.574	0.154	-0.573	0.306
ED12	1.465	0.154	1.594	0.306
ED13	1.239	0.154	1.758	0.306
ED14	0.182	0.154	-0.898	0.306
ED15	0.097	0.154	-1.133	0.306
II1	1.454	0.154	1.273	0.306
II2	0.270	0.154	-0.885	0.306
II3	0.143	0.154	-1.074	0.306
II4	-0.122	0.154	-0.954	0.306
II5	-0.440	0.154	-0.966	0.306
II6	-0.475	0.154	-0.880	0.306
II7	-0.221	0.154	-1.149	0.306
II8	-0.348	0.154	-0.932	0.306
II9	-0.244	0.154	-1.035	0.306
II10	0.624	0.154	-0.594	0.306
II11	-0.399	0.154	-0.750	0.306
II12	-0.520	0.154	-0.919	0.306
II13	-0.666	0.154	-0.851	0.306
TIM1	1.750	0.154	3.049	0.306
TIM2	0.681	0.154	-0.214	0.306
TIM3	0.024	0.154	-1.258	0.306
TIM4	-0.333	0.154	-1.196	0.306
TIM5	-0.555	0.154	-0.946	0.306
TIM6	-0.479	0.154	-0.801	0.306
TIM7	-0.008	0.154	-1.081	0.306
TIM8	-0.219	0.154	-0.992	0.306
TIM9	0.085	0.154	-0.757	0.306

TIM10	0.607	0.154	-0.395	0.306
TIM11	0.260	0.154	-0.880	0.306
TIM12	0.187	0.154	-1.035	0.306

Note: Std. Err. = Standard Error.

The result of reliability for all the scale variables is presented in Table 5.17 Three items from ED (ED_13, ED_14, and ED_15), two items from II (II_1 and II_2), and two items from TIM (TIM_1 and TIM_10) were removed due to the low corrected item-total correlation. This is because corrected item-total correlation values greater than 0.3 are acceptable (Field, 2018, p. 1050). The removed items were eliminated from the rest of the analysis. The Cronbach alpha (α) values ranged between 0.848 and 0.908 and were greater than 0.7, as the threshold (Bagozzi & Yi, 2012).

Table 5.16: Reliability Analysis

Items	Corrected Item-Total Correlation	Cronbach alpha (α)
Environmental Dimension		0.849
ED_1	0.465	
ED_2	0.636	
ED_3	0.537	
ED_4	0.546	
ED_5	0.53	
ED_6	0.494	
ED_7	0.419	
ED_8	0.619	
ED_9	0.467	
ED_10	0.485	
ED_11	0.59	
ED_12	0.386	
ED_13	-	
ED_14	-	

ED_15	-	
Institutional Issues		0.908
II_1	-	
II_2	-	
II_3	0.351	
II_4	0.607	
II_5	0.741	
II_6	0.782	
II_7	0.635	
II_8	0.788	
II_9	0.757	
II_10	0.353	
II_11	0.735	
II_12	0.77	
II_13	0.693	
Tourism development and ICZM		0.848
TIM_1	-	
TIM_2	0.328	
TIM_3	0.439	
TIM_4	0.613	
TIM_5	0.703	
TIM_6	0.718	
TIM_7	0.576	
TIM_8	0.533	
TIM_9	0.373	
TIM_10	-	
TIM_11	0.604	
TIM_12	0.581	

Note: (-) removed items due to the low corrected item-total correlation.

The result of frequency analysis for all the variables are shown in Table 5.18 These results revealed that in average, majority of the respondents were agreed to the

questions of the ED and TIM variables (35.8% and 28.7%, respectively). However, in average, majority of the respondents were disagreed with the questions of the II variable (32.2%).

Table 5.17: Frequency Analysis for All the Variables

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
Variables	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
ED_1	79.0	31.5	81.0	32.3	42.0	16.7	36.0	14.3	13.0	5.2
ED_2	47.0	18.7	108.0	43.0	51.0	20.3	35.0	13.9	10.0	4.0
ED_3	48.0	19.1	92.0	36.7	70.0	27.9	32.0	12.7	9.0	3.6
ED_4	94.0	37.5	89.0	35.5	42.0	16.7	20.0	8.0	6.0	2.4
ED_5	98.0	39.0	82.0	32.7	32.0	12.7	31.0	12.4	8.0	3.2
ED_6	75.0	29.9	100.0	39.8	38.0	15.1	21.0	8.4	17.0	6.8
ED_7	53.0	21.1	93.0	37.1	65.0	25.9	27.0	10.8	13.0	5.2
ED_8	72.0	28.7	81.0	32.3	56.0	22.3	28.0	11.2	14.0	5.6
ED_9	55.0	21.9	105.0	41.8	53.0	21.1	23.0	9.2	15.0	6.0
ED_10	61.0	24.3	78.0	31.1	86.0	34.3	21.0	8.4	5.0	2.0
ED_11	64.0	25.5	87.0	34.7	50.0	19.9	35.0	13.9	15.0	6.0
ED_12	128.0	51.0	82.0	32.7	17.0	6.8	17.0	6.8	7.0	2.8
Avg. ED	72.8	29.0	89.8	35.8	50.2	20.0	27.2	10.8	11.0	4.4
II_3	49.0	19.5	64.0	25.5	57.0	22.7	56.0	22.3	25.0	10.0
II_4	46.0	18.3	38.0	15.1	78.0	31.1	61.0	24.3	28.0	11.2
II_5	40.0	15.9	34.0	13.5	47.0	18.7	95.0	37.8	35.0	13.9
II_6	36.0	14.3	39.0	15.5	51.0	20.3	104.0	41.4	21.0	8.4
II_7	44.0	17.5	47.0	18.7	48.0	19.1	85.0	33.9	27.0	10.8
II_8	41.0	16.3	35.0	13.9	63.0	25.1	86.0	34.3	26.0	10.4
II_9	39.0	15.5	47.0	18.7	56.0	22.3	84.0	33.5	25.0	10.0
II_10	72.0	28.7	88.0	35.1	41.0	16.3	38.0	15.1	12.0	4.8
II_11	29.0	11.6	40.0	15.9	63.0	25.1	91.0	36.3	28.0	11.2
II_12	37.0	14.7	36.0	14.3	37.0	14.7	105.0	41.8	36.0	14.3
II_13	36.0	14.3	27.0	10.8	30.0	12.0	83.0	33.1	75.0	29.9
Avg. II	42.6	17.0	45.0	17.9	51.9	20.7	80.7	32.2	30.7	12.2
TIM_2	78.0	31.1	88.0	35.1	54.0	21.5	24.0	9.6	7.0	2.8
TIM_3	48.0	19.1	63.0	25.1	40.0	15.9	71.0	28.3	29.0	11.6

TIM_4	51.0	20.3	31.0	12.4	43.0	17.1	84.0	33.5	42.0	16.7
TIM_5	44.0	17.5	28.0	11.2	37.0	14.7	108.0	43.0	34.0	13.5
TIM_6	30.0	12.0	38.0	15.1	49.0	19.5	97.0	38.6	37.0	14.7
TIM_7	47.0	18.7	59.0	23.5	61.0	24.3	68.0	27.1	16.0	6.4
TIM_8	42.0	16.7	46.0	18.3	67.0	26.7	79.0	31.5	17.0	6.8
TIM_9	26.0	10.4	67.0	26.7	78.0	31.1	56.0	22.3	24.0	9.6
TIM_11	67.0	26.7	99.0	39.4	48.0	19.1	32.0	12.7	5.0	2.0
TIM_12	32.0	12.7	84.0	33.5	59.0	23.5	52.0	20.7	24.0	9.6
Avg. TIM	38.0	15.1	72.0	28.7	58.0	23.1	49.0	19.5	34.0	13.5
Average	54.8	21.8	65.9	26.3	51.8	20.6	57.1	22.8	21.4	8.5

5.7 Mean Comparison of Variables

In order to investigate the influence of gender, age, location, and years of residency on residents' perceptions regarding all the variables, the t-test and ANOVA were utilized. The mean scores, which were measured on a Likert scale from 1 = strongly agree to 5 = strongly disagree, were used for the ranking. The results are presented in Tables 5.20 to 5.21 Moreover, the post hoc analysis of Scheffe was implemented to explore differences in variables between the subgroups of related variables.

Table 5.18: All variables and Gender Means Comparing Means

Items	t-Value	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference
ED_1	0.409	249	0.683	0.063	0.153
ED_2	0.338	249	0.736	0.046	0.136
ED_3	−0.493	249	0.623	−0.066	0.134
ED_4	0.538	249	0.591	0.071	0.132
ED_5	1.946	249	0.053	0.281	0.144
ED_6	−1.242	249	0.215	−0.184	0.148
ED_7	−0.302	249	0.763	−0.042	0.140
ED_8	−1.051	249	0.294	−0.156	0.148
ED_9	−1.349	249	0.179	−0.189	0.140

ED_10	−0.332	249	0.740	−0.042	0.127
ED_11	−0.631	249	0.528	−0.095	0.151
ED_12	−0.953	249	0.342	−0.125	0.131
II_3	1.641	249	0.102	0.265	0.161
II_4	2.212	249	0.028 *	0.351	0.159
II_5	3.192	249	0.002 **	0.517	0.162
II_6	3.417	249	0.001 **	0.516	0.151
II_7	2.623	249	0.009 **	0.426	0.162
II_8	2.257	249	0.025 *	0.355	0.157
II_9	2.705	249	0.007 **	0.423	0.156
II_10	1.389	249	0.166	0.208	0.150
II_11	2.808	249	0.005 **	0.417	0.149
II_12	2.384	249	0.018 *	0.388	0.163
II_13	0.899	249	0.370	0.159	0.177
TIM_2	−0.304	249	0.762	−0.041	0.136
TIM_3	−0.189	249	0.850	−0.032	0.169
TIM_4	3.843	249	0.000 ***	0.662	0.172
TIM_5	4.081	249	0.000 ***	0.664	0.163
TIM_6	2.745	249	0.006 **	0.426	0.155
TIM_7	2.009	249	0.046 *	0.308	0.154
TIM_8	−0.702	249	0.484	−0.107	0.153
TIM_9	−1.631	249	0.104	−0.235	0.144
TIM_11	1.383	249	0.168	0.208	0.151
TIM_12	−0.353	249	0.724	−0.057	0.162

Notes: Sig. = Significant; df = degree of freedom; std. = standard. * = The mean difference is significant at the $p \leq 0.05$ level; ** = The mean difference is significant at the $p \leq 0.01$ level; *** = The mean difference is significant at the $p \leq 0.001$ level.

The result of the independent samples t-test in Table 6.15 shows that there is a statistically significant difference between the male and female respondents in only the means of II_4 to 9, II_11, II_12, and TIM_4 to 7 variables. The results showed that the mean for these variables was greater for female respondents than for males. These results revealed that males were more agreed about II_4, 5, 6, 7, 8, and 9 variables

(mean = 2.796, 2.979, 2.915, 2.831, 2.930, and 2.852, respectively) than females (mean = 3.147, 3.495, 3.431, 3.257, 3.284, and 3.275, respectively). Moreover, males were shown to be more agreed or neutral about the TIM_4, 5, 6, and 7 variables (mean = 2.852, 2.951, 3.106, 2.655, respectively) than fe-males (mean = 3.514, 3.615, 3.532, and 2.963, respectively).

Differences between the perceptions of residents by different age levels of the residents were verified using one-way ANOVA. The results are presented in Table 5.16, which shows that there were significant differences in community members' perception of the ED_4, II_6, II_10, TIM_4, TIM_5, TIM_7, TIM_11, and TIM_12 variables regarding their age levels.

Table 5.21: One-Way ANOVA for comparing means of items and Age

Items		Sum of Squares	df	Mean Square	F	Sig.
ED1	Between Groups	12.188	4	3.047	2.154	0.075
	Within Groups	347.995	246	1.415		
ED2	Between Groups	2.871	4	0.718	0.626	0.644
	Within Groups	282.037	246	1.146		
ED3	Between Groups	7.826	4	1.957	1.794	0.131
	Within Groups	268.301	246	1.091		
ED4	Between Groups	11.126	4	2.782	2.645	0.034 *
	Within Groups	258.731	246	1.052		
ED5	Between Groups	4.335	4	1.084	0.833	0.505
	Within Groups	320.071	246	1.301		
ED6	Between Groups	12.453	4	3.113	2.356	0.054
	Within Groups	325.053	246	1.321		
ED7	Between Groups	6.185	4	1.546	1.299	0.271
	Within Groups	292.891	246	1.191		
ED8	Between Groups	4.986	4	1.246	0.917	0.454

	Within Groups	334.225	246	1.359		
ED9	Between Groups	9.499	4	2.375	1.987	0.097
	Within Groups	293.943	246	1.195		
ED10	Between Groups	1.809	4	0.452	0.450	0.773
	Within Groups	247.402	246	1.006		
ED11	Between Groups	3.004	4	0.751	0.535	0.710
	Within Groups	345.355	246	1.404		
ED12	Between Groups	5.702	4	1.425	1.360	0.248
	Within Groups	257.804	246	1.048		
II3	Between Groups	8.016	4	2.004	1.246	0.292
	Within Groups	395.490	246	1.608		
II4	Between Groups	3.861	4	0.965	0.608	0.657
	Within Groups	390.466	246	1.587		
II5	Between Groups	11.259	4	2.815	1.700	0.151
	Within Groups	407.378	246	1.656		
II6	Between Groups	14.331	4	3.583	2.505	0.043 *
	Within Groups	351.789	246	1.430		
II7	Between Groups	8.541	4	2.135	1.289	0.275
	Within Groups	407.396	246	1.656		
II8	Between Groups	6.476	4	1.619	1.046	0.384
	Within Groups	380.768	246	1.548		
II9	Between Groups	10.794	4	2.699	1.766	0.136
	Within Groups	375.883	246	1.528		
II10	Between Groups	30.759	4	7.690	5.984	0.000
	Within Groups	316.102	246	1.285		
II11	Between Groups	10.697	4	2.674	1.942	0.104
	Within Groups	338.738	246	1.377		
II12	Between Groups	8.822	4	2.206	1.335	0.257
	Within Groups	406.293	246	1.652		
II13	Between Groups	12.474	4	3.119	1.632	0.167
	Within Groups	469.988	246	1.911		
TIM2	Between Groups	1.510	4	0.378	0.330	0.858
	Within Groups	281.422	246	1.144		

TIM3	Between Groups	6.785	4	1.696	0.967	0.426
	Within Groups	431.629	246	1.755		
TIM4	Between Groups	18.788	4	4.697	2.494	0.044 *
	Within Groups	463.332	246	1.883		
TIM5	Between Groups	17.933	4	4.483	2.653	0.034 *
	Within Groups	415.725	246	1.690		
TIM6	Between Groups	11.384	4	2.846	1.890	0.113
	Within Groups	370.385	246	1.506		
TIM7	Between Groups	14.437	4	3.609	2.513	0.042 *
	Within Groups	353.371	246	1.436		
TIM8	Between Groups	13.372	4	3.343	2.374	0.053
	Within Groups	346.476	246	1.408		
TIM9	Between Groups	9.233	4	2.308	1.815	0.126
	Within Groups	312.870	246	1.272		
TIM11	Between Groups	18.778	4	4.694	3.478	0.009 **
	Within Groups	332.043	246	1.350		
TIM12	Between Groups	30.724	4	7.681	5.046	0.001 **
	Within Groups	374.448	246	1.522		

Notes: df = degree of freedom; Sig. = Significant; F = F-value; * = $p \leq 0.05$ level; ** = $p \leq 0.01$ level.

Differences between the perceptions of residents by different years of residency of the residents were verified using one-way ANOVA. The results are presented in Table 5.21, which shows that there is also a significant difference in the ED_10 to 12, II_4, II_9 to 11, TIM_4 to 7, and TIM_11 variables regarding the years of residency.

Table 5.19: One-Way ANOVA for comparing means of items and Years of Residency

Items		Sum of Squares	df	Mean Square	F	Sig.
ED1	Between Groups	9.164	6	1.527	1.062	0.386
	Within Groups	351.020	244	1.439		
ED2	Between Groups	7.031	6	1.172	1.029	0.407

	Within Groups	277.877	244	1.139		
ED3	Between Groups	9.995	6	1.666	1.527	0.170
	Within Groups	266.133	244	1.091		
ED4	Between Groups	5.326	6	0.888	0.819	0.556
	Within Groups	264.530	244	1.084		
ED5	Between Groups	14.196	6	2.366	1.861	0.088
	Within Groups	310.210	244	1.271		
ED6	Between Groups	16.420	6	2.737	2.080	0.056
	Within Groups	321.086	244	1.316		
ED7	Between Groups	2.976	6	0.496	0.409	0.873
	Within Groups	296.100	244	1.214		
ED8	Between Groups	10.415	6	1.736	1.288	0.263
	Within Groups	328.797	244	1.348		
ED9	Between Groups	12.540	6	2.090	1.753	0.109
	Within Groups	290.902	244	1.192		
ED10	Between Groups	13.041	6	2.173	2.245	0.040 *
	Within Groups	236.171	244	0.968		
ED11	Between Groups	23.747	6	3.958	2.975	0.008 **
	Within Groups	324.611	244	1.330		
ED12	Between Groups	16.843	6	2.807	2.777	0.012 *
	Within Groups	246.663	244	1.011		
II3	Between Groups	16.352	6	2.725	1.718	0.117
	Within Groups	387.154	244	1.587		
II4	Between Groups	24.646	6	4.108	2.711	0.014 **
	Within Groups	369.680	244	1.515		
II5	Between Groups	19.390	6	3.232	1.975	0.070
	Within Groups	399.248	244	1.636		
II6	Between Groups	17.904	6	2.984	2.091	0.055
	Within Groups	348.216	244	1.427		
II7	Between Groups	8.762	6	1.460	0.875	0.514
	Within Groups	407.175	244	1.669		
II8	Between Groups	17.060	6	2.843	1.874	0.086
	Within Groups	370.183	244	1.517		

II9	Between Groups	20.675	6	3.446	2.297	0.036 *
	Within Groups	366.002	244	1.500		
II10	Between Groups	23.084	6	3.847	2.899	0.010 *
	Within Groups	323.777	244	1.327		
II11	Between Groups	21.798	6	3.633	2.706	0.015 *
	Within Groups	327.637	244	1.343		
II12	Between Groups	14.117	6	2.353	1.432	0.203
	Within Groups	400.998	244	1.643		
II13	Between Groups	11.917	6	1.986	1.030	0.406
	Within Groups	470.545	244	1.928		
TIM2	Between Groups	5.457	6	0.909	0.800	0.571
	Within Groups	277.476	244	1.137		
TIM3	Between Groups	3.223	6	0.537	0.301	0.936
	Within Groups	435.191	244	1.784		
TIM4	Between Groups	37.262	6	6.210	3.406	0.003 **
	Within Groups	444.857	244	1.823		
TIM5	Between Groups	35.325	6	5.887	3.606	0.002 **
	Within Groups	398.333	244	1.633		
TIM6	Between Groups	30.395	6	5.066	3.518	0.002 **
	Within Groups	351.374	244	1.440		
TIM7	Between Groups	18.744	6	3.124	2.184	0.045 *
	Within Groups	349.065	244	1.431		
TIM8	Between Groups	13.871	6	2.312	1.630	0.139
	Within Groups	345.978	244	1.418		
TIM9	Between Groups	12.706	6	2.118	1.670	0.129
	Within Groups	309.398	244	1.268		
TIM11	Between Groups	21.819	6	3.637	2.697	0.015 *
	Within Groups	329.001	244	1.348		
TIM12	Between Groups	9.430	6	1.572	0.969	0.447
	Within Groups	395.741	244	1.622		

Notes: df = degree of freedom; Sig. = Significant; F = F-value; * = $p \leq 0.05$ level; ** = $p \leq 0.01$ level.

Differences between the perceptions of residents by different occupation of the residents were verified using one-way ANOVA. The results are presented in Table 5.22, which shows that there were significant differences in community members' perception of the ED_11 and II_6 variables regarding their occupation.

Table 5.20: One-Way ANOVA for comparing means of items and Occupation

Items		Sum of Squares	df	Mean Square	F	Sig.
ED1	Between Groups	4.770	2	2.385	1.664	0.191
	Within Groups	355.413	248	1.433		
ED2	Between Groups	2.785	2	1.393	1.224	0.296
	Within Groups	282.123	248	1.138		
ED3	Between Groups	1.877	2	0.938	0.849	0.429
	Within Groups	274.251	248	1.106		
ED4	Between Groups	4.539	2	2.270	2.121	0.122
	Within Groups	265.317	248	1.070		
ED5	Between Groups	0.297	2	0.148	0.113	0.893
	Within Groups	324.110	248	1.307		
ED6	Between Groups	3.427	2	1.713	1.272	0.282
	Within Groups	334.079	248	1.347		
ED7	Between Groups	1.056	2	0.528	0.439	0.645
	Within Groups	298.020	248	1.202		
ED8	Between Groups	0.836	2	0.418	0.306	0.736
	Within Groups	338.375	248	1.364		
ED9	Between Groups	1.458	2	0.729	0.599	0.550
	Within Groups	301.984	248	1.218		
ED10	Between Groups	1.665	2	0.833	0.834	0.435
	Within Groups	247.546	248	0.998		
ED11	Between Groups	11.874	2	5.937	4.376	0.014 *
	Within Groups	336.484	248	1.357		
ED12	Between Groups	5.274	2	2.637	2.533	0.082
	Within Groups	258.232	248	1.041		

II3	Between Groups	2.326	2	1.163	0.719	0.488
	Within Groups	401.180	248	1.618		
II4	Between Groups	3.066	2	1.533	0.972	0.380
	Within Groups	391.261	248	1.578		
II5	Between Groups	7.339	2	3.669	2.213	0.112
	Within Groups	411.299	248	1.658		
II6	Between Groups	10.440	2	5.220	3.640	0.028 *
	Within Groups	355.680	248	1.434		
II7	Between Groups	3.520	2	1.760	1.058	0.349
	Within Groups	412.416	248	1.663		
II8	Between Groups	0.237	2	0.119	0.076	0.927
	Within Groups	387.006	248	1.561		
II9	Between Groups	2.949	2	1.474	0.953	0.387
	Within Groups	383.729	248	1.547		
II10	Between Groups	0.396	2	0.198	0.142	0.868
	Within Groups	346.464	248	1.397		
II11	Between Groups	1.145	2	0.573	0.408	0.666
	Within Groups	348.289	248	1.404		
II12	Between Groups	1.612	2	0.806	0.484	0.617
	Within Groups	413.503	248	1.667		
II13	Between Groups	0.671	2	0.336	0.173	0.841
	Within Groups	481.791	248	1.943		
TIM2	Between Groups	5.731	2	2.865	2.563	0.079
	Within Groups	277.202	248	1.118		
TIM3	Between Groups	3.408	2	1.704	0.971	0.380
	Within Groups	435.006	248	1.754		
TIM4	Between Groups	1.080	2	0.540	0.278	0.757
	Within Groups	481.040	248	1.940		
TIM5	Between Groups	0.333	2	0.167	0.095	0.909
	Within Groups	433.324	248	1.747		
TIM6	Between Groups	0.804	2	0.402	0.262	0.770
	Within Groups	380.965	248	1.536		
TIM7	Between Groups	8.113	2	4.056	2.797	0.063

	Within Groups	359.696	248	1.450		
TIM8	Between Groups	2.003	2	1.001	0.694	0.501
	Within Groups	357.846	248	1.443		
TIM9	Between Groups	0.889	2	0.445	0.343	0.710
	Within Groups	321.214	248	1.295		
TIM11	Between Groups	1.595	2	0.798	0.566	0.568
	Within Groups	349.225	248	1.408		
TIM12	Between Groups	1.792	2	0.896	0.551	0.577
	Within Groups	403.379	248	1.627		

Notes: df = degree of freedom; Sig. = Significant; F = F-value; * = $p \leq 0.05$ level.

Differences between the perceptions of residents by different location of the residents were verified using one-way ANOVA. The results are presented in Table 5.24, which shows that there is a significant difference in the ED_1, ED_5, II_6 to 9, II_12 to 13, and TIM_3 to 8 variables regarding the community members' locations.

Table 5.21: One-Way ANOVA for comparing means of items and Location

Items		Sum of Squares	df	Mean Square	F	Sig.
ED1	Between Groups	34.388	7	4.913	3.664	0.001 **
	Within Groups	325.795	243	1.341		
ED2	Between Groups	11.417	7	1.631	1.449	0.186
	Within Groups	273.491	243	1.125		
ED3	Between Groups	14.380	7	2.054	1.907	0.069
	Within Groups	261.747	243	1.077		
ED4	Between Groups	8.475	7	1.211	1.126	0.348
	Within Groups	261.382	243	1.076		
ED5	Between Groups	21.682	7	3.097	2.486	0.018 *
	Within Groups	302.724	243	1.246		
ED6	Between Groups	3.248	7	0.464	0.337	0.936
	Within Groups	334.258	243	1.376		
ED7	Between Groups	16.542	7	2.363	2.032	0.052

	Within Groups	282.534	243	1.163		
ED8	Between Groups	9.965	7	1.424	1.051	0.396
	Within Groups	329.246	243	1.355		
ED9	Between Groups	4.243	7	0.606	0.492	0.840
	Within Groups	299.199	243	1.231		
ED10	Between Groups	5.472	7	0.782	0.779	0.605
	Within Groups	243.739	243	1.003		
ED11	Between Groups	9.982	7	1.426	1.024	0.415
	Within Groups	338.376	243	1.392		
ED12	Between Groups	4.990	7	0.713	0.670	0.697
	Within Groups	258.516	243	1.064		
II3	Between Groups	7.919	7	1.131	0.695	0.676
	Within Groups	395.587	243	1.628		
II4	Between Groups	18.861	7	2.694	1.744	0.100
	Within Groups	375.466	243	1.545		
II5	Between Groups	24.693	7	3.528	2.176	0.037
	Within Groups	393.944	243	1.621		
II6	Between Groups	27.220	7	3.889	2.788	0.008 **
	Within Groups	338.900	243	1.395		
II7	Between Groups	55.601	7	7.943	5.356	0.000 ***
	Within Groups	360.336	243	1.483		
II8	Between Groups	28.971	7	4.139	2.807	0.008 **
	Within Groups	358.272	243	1.474		
II9	Between Groups	41.700	7	5.957	4.196	0.000 ***
	Within Groups	344.978	243	1.420		
II10	Between Groups	14.871	7	2.124	1.555	0.150
	Within Groups	331.989	243	1.366		
II11	Between Groups	19.088	7	2.727	2.006	0.055
	Within Groups	330.346	243	1.359		
II12	Between Groups	23.650	7	3.379	2.097	0.045 *
	Within Groups	391.465	243	1.611		
II13	Between Groups	42.067	7	6.010	3.316	0.002 **
	Within Groups	440.395	243	1.812		

TIM2	Between Groups	15.742	7	2.249	2.045	0.050
	Within Groups	267.190	243	1.100		
TIM3	Between Groups	44.562	7	6.366	3.928	0.000 ***
	Within Groups	393.853	243	1.621		
TIM4	Between Groups	41.699	7	5.957	3.287	0.002 **
	Within Groups	440.420	243	1.812		
TIM5	Between Groups	31.452	7	4.493	2.715	0.010 *
	Within Groups	402.206	243	1.655		
TIM6	Between Groups	37.572	7	5.367	3.789	0.001 **
	Within Groups	344.197	243	1.416		
TIM7	Between Groups	48.680	7	6.954	5.295	0.000 ***
	Within Groups	319.128	243	1.313		
TIM8	Between Groups	20.374	7	2.911	2.083	0.046 *
	Within Groups	339.474	243	1.397		
TIM9	Between Groups	13.944	7	1.992	1.571	0.145
	Within Groups	308.159	243	1.268		
TIM11	Between Groups	13.704	7	1.958	1.411	0.201
	Within Groups	337.117	243	1.387		
TIM12	Between Groups	19.859	7	2.837	1.789	0.090
	Within Groups	385.312	243	1.586		

Notes: df = degree of freedom; Sig. = Significant; F = F-value; * = $p \leq 0.05$ level; ** = $p \leq 0.01$ level; *** = $p \leq 0.001$ level.

In order to find out which pairs of means are significantly different from each other between the groups of variables, Scheffe's post hoc test was utilized. The summary of the results are shown in Table 5.20 and the full report of that is provided on the Appendix C, Tables C.1 to 3.

The results of Scheffe's post hoc test in Table 5.20 showed that, for the II_10, TIM_11, and TIM_12 variables, there is a main effect for age levels ($F = 5.984$, 3.478, and 5.046, $p < 0.01$), due to residents with ages ranging 51–65 scoring higher than those

with ages rang-ing 20–30, 41–50, and 66–80 (only for II_10). The results showed that the mean for these variables was greater for respondents with ages ranging 51–65 than for others. These results revealed that residents with ages ranging 66–80 (mean = 1.800, only for II_10), 41–50 (mean = 2.103, 2.632, and 2.588, respectively), and 20–30 (mean = 2.130, 2.565, and 2.413, respectively) were more agreed about the II_10, TIM_11, and TIM_12 variables than residents age ranging 51–65 (mean = 2.862, 3.262, and 3.38, respectively). These results also revealed that residents with ages ranging 66–80 were the most agreed about the II_10 variable.

The results of Scheffe's post hoc test in Table 5.22 showed that, for the TIM_5 and TIM_6 variables, there is a main effect for years of residency ($F = 3.606$ and 3.518, $p < 0.01$), due to those with residency years ranging 1–10 and 11–20 (for TIM_5 and TIM_6, respectively) scoring higher than those with residency years ranging 51–60. These results revealed that residents with 1 to 10 and 11 to 20 years of residence (mean = 4.188 and 3.772, respectively) were more disagreed about the TIM_5 and TIM_6 variables than residents with 51 to 60 years of residence (mean = 2.538 and 2.615, respectively).

Table 5.22: The summary of the Scheffe Post-Hoc Analysis for ANOVA of all the Variables and Age, Years of Residency, Occupation, and Location

Items	Age	Years of Residency	Occupation	Location
ED_1				
ED_2				
ED_3				
ED_4				
ED_5				
ED_6				
ED_7				

ED_8				
ED_9				
ED_10				
ED_11			[3] > [2]	
ED_12				
II_3				
II_4				
II_5				
II_6			[3] > [1]	
II_7				«2»«6» > «7»
II_8				
II_9				«2»«4» > «7»
II_10	(4) > (1)(3)(5)			
II_11				
II_12				
II_13				«6» > «7»
TIM_2				
TIM_3				«6»«2» > «7»
TIM_4				«5» > «7»
TIM_5		{1} > {6}		
TIM_6		{2} > {6}		«5»«8» > «7»
TIM_7				«5»«8» > «6»
TIM_8				
TIM_9				
TIM_11	(4) > (3)(1)			
TIM_12	(4) > (3)(1)			

Notes: (1), (2), (3), (4), and (5) represent the mean score of age ranging 20–30, 31–40, 41–50, 51–65, and 66–80, respectively. [1], [2], and [3] represent the mean score of Self-employed, Governmental job, and Unemployed, respectively. {1}, {2}, {3}, {4}, {5}, {6}, {7} represent the years of residency ranging 1–10, 11–20, 21–30, 31–40, 41–50, 51–60, and 61 years and above, respectively. «1», «2», «3», «4», «5», «6», «7», and «8» represent the locations of Bafra, Kumyali, Kaleburnu, Tatlisu, Balalan, Kaplica, Dipkarpaz, and Yenierenkoy, respectively.

The results of Scheffe's post hoc test in Table 6.20 showed that, for the ED_11 and II_6 variables, there is a main effect for the resident's occupation ($F = 4.376$ and 3.640, $p < 0.05$), due to the unemployed residents scoring higher than residents with full-time/governmental jobs and self-employed residents (for ED_11 and II_6, respectively). These results revealed that residents with full-time/governmental jobs and self-employed residents (mean = 2.246 and 2.863, respectively) were more agreed about ED_11 and II_6 variables than unemployed residents (mean = 2.844 and 3.422, respectively).

The results of Scheffe's post hoc test in Table 5.22 showed that, for the II_7, II_9, II_13, TIM_3, TIM_4, TIM_6, and TIM_7 variables, there is a main effect for resident's location ($F = 5.356$, 4.196, 3.316, 3.928, 3.287, 3.789, and 5.295, $p < 0.01$ or better). This is because the residents of Kumyali, Tatlisu, Balalan, and Kaplica scored higher than the residents of Dipkarpaz, and the residents of Balalan and Yenierenkoy scored higher than the residents of Kaplica.

These results revealed that the residents of Dipkarpaz (mean = 2.364, 2.341, 2.886, 2.250, 2.318, and 2.545, respectively) and Kaplica (mean = 1.909, only for TIM_7) were more agreed about the II_7, II_9, II_13, TIM_3, TIM_4, TIM_6, and TIM_7 variables than the residents of Kaplica and Kumyali (mean = 3.682 and 3.692, respectively, for II_7). Furthermore, for residents of Tatlisu and Kumyali, the mean = 3.452 and 3.615, respectively, for II_9; for residents of Kumyali, the mean = 3.615, for II_13; for residents Kumyali and Kaplica, the mean = 3.538 and 3.545, respectively, for TIM_3. In addition, for residents of Balalan, the mean = 3.630, for TIM_4; for residents of Yenierenkoy and Balalan, the mean = 3.543 and 3.815,

respectively, for TIM_6; for residents of Yenierenkoy and Balalan, the mean = 3.239 and 3.444, respectively, for TIM_7.

Chapter 6

DISCUSSION AND CONCLUSION

This study examined the perceptions of coastal communities in the case of Northern Cyprus. TRNC is highly dependent on tourism, tourism is also highly dependent on coastal resources (Alipour et al., 2007; Alipour & Kilic, 2005). To contribute to our understanding of coastal governance based on the ICZM framework, we employed SESs and Ostrom's collective action principles as theoretical backdrops. This paper is the first attempt to investigate North Cyprus's coastal management policies and governance based on the aforementioned theories and the coastal communities' perception.

Based on Balcı's (2004) recommendation and the results, the answer to the first and second research questions indicate that ICZM has not been institutionalized as a framework to guide the management of coastal zones. As shown in Appendix A, coastal community residents expressed their lack of knowledge and awareness of any institutional approach to the governance of coastal zones. Nevertheless, tourism is perceived as the main source of impact by residents, and ICZM might be able to address or negate those impacts to some degree. This means that they have no cognizance of any institutional policy or its implementation toward an integrated ICZM and tourism development. This is in line with a study by Gray et al. (2017), who investigated coastal community residents' perceptions concerning coastal hazard mitigation.

There were some common perceptions regarding environmental dimensions (ED) in coastal areas. In this regard, the perception was that tourism negatively affected coastal areas and the lack of a framework such as ICZM exacerbated the negative impacts. This finding is also supported by Zahedi (2008), who examined the 3S tourism's negative impacts Zahedi (2008, p. 49) highlighted that:

> This type of tourism which is the main cause of developing too many buildings, too close to beaches, is associated with the emergence of a leisure-dominated pleasure periphery occupying a significant portion of the Mediterranean and Caribbean basins, along with the parts of the South-Pacific, South-eastern Asia and Indian Ocean basin. At times, the infrastructure has lagged behind development or has not been maintained, including sewerage, water and power facilities, roads and rubbish clearance in the Caribbean Island and Mexico.

The study has also revealed there is not much difference between male and female respondents regarding the environmental dimension issues. However, regarding the institutional issues and ICZM, female respondents were more skeptical and had doubts and reservations.

Moreover, results revealed that residents with different age levels, years of residency, occupation, and location have the same perception regarding the environmental dimension (ED), except for ED_11, with which residents with full-time/governmental jobs were more agreed in compare comparison to unemployed residents. While residents with different years of residency had the same perception regarding the institutional issues, residents with different occupations had the same perception regarding the ICZM. However, the perception of residents regarding the II_10, TIM_11, and TIM_12 variables were shown to differ according to their different age levels. Residents aged 51–65 agreed less strongly than the other age groups. This implies that the younger residents were either less concerned about the institutional issues and ICZM or less aware. Moreover, residents with less than 20 years of

residency were shown to disagree more strongly or to be neutral regarding the TIM_5 and TIM_6 variables, compared to the residents with 51–60 years of residency. This implies that residents with longer residency have more awareness of ICMZ related issues. The results also revealed that residents with full-time/governmental jobs and self-employed residents agreed more strongly about the ED_11 and II_6 variables than the unemployed residents. Regarding the location of residents, the results showed that residents of Dipkarpaz agreed more strongly about the II_7, II_9, II_13, TIM_3, TIM_4, and TIM_6 variables in comparison to residents of Kaplica, Kumyali, Tatlisu, and Balalan. In addition, residents of Kaplica were shown to agree more strongly about TIM_7 in comparison to residents of Balalan and Yenierenkoy. This means that the institutional and ICMZ issues are less problematic in Dipkarpaz and Kaplica than in other locations. It can be concluded that residents of Dipkarpaz and Kaplica areas are also more aware of institutional and ICMZ issues than other locations.

A survey conducted with residents of eight coastal communities in North Cyprus revealed several similarities, as well as important differences, in their awareness and perceptions of institutional issues, ICZM, and the environmental impacts of coastal development including tourism. Lack of awareness and knowledge about overall coastal management and governance among the surveyed communities indicates that the relationships and interactions between coastal communities and coastal resources as commons are devoid of the perception of these resources in the context of socio-ecological systems (SES). To uphold and embed the principles of SES requires a cohesive collective approach as elaborated in Ostrom's collective action principles. In all communities that were investigated, participants understood the values of coastal resources; however, they had minimal understanding of ICZM, SES, and the collective approach to the governance of coastal areas. This research Sustainability 2022, 14,

1066 20 of has found that government and the tourism sector have failed to bring the communities on board and to involve them in enhancing social capital, which is essential for collaboration in any social innovation (Partanen & Sarkki, 2021; Whitney et al., 2017).

We have also taken the effort to review existing laws and amendments pertaining to the management of coastal zones. Two sets of legislation were reviewed by the authors that included legislation No. 1/1992, 22/1961, 26/1993, 28/1996, and 55/89.2020—construction regulation MTE, 2019 (Ministry of Tourism and Environment). Prior to the year 2020, the regulations regarding coastal zones lacked any comprehensive guideline or management system. However, the laws that were recently revised addressed issues of distance from the shoreline, the bulk of the construction, and intensity of development for the purpose of tourism. The legislation failed to address the issues relevant to ICZM and community involvement. The new legislation perceived coastal zones as comparable to any other terrestrial entity without considering the specific characteristics of coastal ecosystems. The further pressure on coastal zones is underway as the development of second-home tourism is intensified by both local and international investors.

This study is also in line with Heslinga et al.'s (Heslinga et al., 2018, p. 187) study, who applied the SES framework and concluded that a discussion of synergy between tourism and the landscape/ecosystem has been neglected due to a simplistic view of the environmental impact of tourism; therefore, it is time to balance the needs of nature protection and socio-economic development (Heslinga et al., 2018, p. 187). However, this study has also yielded an unexpected finding about the ethos of the community, which signifies the heterogeneity of the community structure. This should come of no

surprise to scholars of community who consider community to consist of complex layers of different views and expectations.

The World Tourism Organization and United Nations Development Program (UNDP) (2017) conceptualized the 2030 Agenda for Sustainable Development Goals (SDG) (Nair & McLeod, 2020). The ICZM can be instrumental in paving the path for the tourism sector and its vast value chain to contribute to the progress towards all 17 SDGs goals.

In the meantime, this study's finding is in line with Gerhartz-Abraham et al.'s (2016, p. 69), findings who revealed the effectiveness of ICZM in the case of Cuba. Furthermore, they emphasized coastal community participation as the backbone of successful ICZM. They recommended 'policymakers to explore new integrative arrangements in the governance framework that promotes local engagement and empowerment in order to improve legitimacy of the regulatory regime and hence compliance' (2016, p. 74).

6.1 Limitations and Pathway for Future Studies

This study also has some limitations. The first limitation was that it coincided with the COVID-19 pandemic, which restricted access to a larger sample. The issues identified and discussed in this study could be explored extensively if there was an opportunity to conduct a qualitative study as well (i.e., mixed method). For future studies, we recommend including the awareness, perceptions, and preferences of other governance actors, local officials, tourism operators, and businesses, as well as advocacy groups (i.e., NGOs). Studies of residents living outside of the immediate coastal region could determine how their perceptions, understanding, and preferences compare to those of

coastal residents in generating wide-ranging qualitative studies with representative samples of noncoastal residents. As the public costs of coastal environments increase, it is significant to explore the perceptions and preferences of a broader public, especially where the coast is the main resource.

6.2 Theoretical and Practical Contribution

Empirical insights were drawn from eight coastal communities in North Cyprus. To enhance our knowledge and more comprehensive understanding of the ICZM Framework, SES and Ostrom's collective action principles were employed to guide the study. The findings enrich the employed theories' relevance if their aim is to achieve a sustainable and productive natural resource governance. They also support and underscore the indispensability of a bottom-up approach to the management and protection of coastal areas. Furthermore, coastal communities' proactive involvement is a challenge as communities are heterogeneous entities that policy makers should reckon with, as noted by Blackstock(2005) and Alesina and La Ferrara (1999) For the public to bring the communities to be part of implementable ICZM, enhancing social capital and social learning need to be part of the strategic process. If we assume that ICZM is a social innovation with a strategic path, it will need to have community participation as part of its infrastructure. We touched upon mass tourism in this case because North Cyprus is highly dependent on sun, sea, and sand (3S) tourism system, which is linked to other systems (e.g., SES). Understanding this 'link' will contribute to bridging different but relevant systems. As Partanen and Sarkki (2021, p. 18) stated, 'at their best, different perspectives of various sectors and actors linked to tourism can result in co-creative, transformative social innovations enhancing holistic sustainability'.

Implementing ICZM as a communication and governance tool must demonstrate to stakeholders (e.g., coastal community residents) how it has the potential to become a strategic pathway towards making the coast a sustainable resource.

Experience of some countries in the implementation of ICZM confirms that Integrated coastal zone management will contribute to making available communities' interests to the parties. This matter will lead to more efficient management of mass tourism and finding the area resources problems. in North Cyprus, under the pressure of lacking water and waste management. On the other hand, will provide opportunities to enhance and diversification of alternative tourism such as eco-tourism, responsible tourism and etc.

Applying SESs can develop compatibility between human activities and natural resources and provision a greater quality of our green treasure to draw in a lot of commercial enterprises, for attract more tourists. One of the importance of ICZM is the promotion of priority to managing mass tourism equalization with increasing quality of coastal areas.

The authors encourage those with similar experiences to additional wide disperse their findings in order that ICZM will notice its full growth potential in building property coastal management. and conjointly, which it'll contribute to and limitations of the system approach to property science and sensible governance.

Finally, all activities of applying for ICZM will cause the creation of a world network for communication and collaborating actions. However, in the context of SES and Ostrom's collective action principles, ICZM and its implementation can be ensured if

coastal residents are empowered to be part of the process. If we assume that ICZM is a master plan to manage coastal areas, it will 'matter' if residents of coastal communities are considered rightful stakeholders (Burby, 2003).

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APPENDICES

Appendix A: Questionnaires

A. Turkish

Doğu Akdeniz Üniversitesi,
Turizm Fakültesi

Sayın Bay/Bayan,

Bu çalışmanın amacı, Kuzey Kıbrıs'taki kıyı bölgeleri ile sürekli etkileşim içinde olan topluluklarda yaşayan sakinlerin algılarını incelemektir. Amaç, turizm ve turizmle bağlantılı gelişmelerin kıyı bölgeleri üzerindeki etkilerini araştırmaktır (örneğin ikinci ev ve tatil evi geliştirme). Bölge sakinlerinin sürdürülebilir kıyı bölgesi yönetimine katılım düzeyleri ve algıları, kıyı bölgelerinin korunması için son derece önem arzetmektedir. Dolayısıyla bu araştırma, kıyı alanlarının şu anki ve gelecekteki sürdürülebilirliği için stratejilerin oluşturulmasına katkı sağlayacaktır.

Lütfen zamanınızdan birkaç dakika ayırıp aşağıdaki ifadeleri doldurunuz. Anketimize yardımcı olmak için zaman ayırdığınızdan dolayı çok teşekkür ederiz.

Saygılarımla,

Tahereh Arefipour, Doktora öğrencisi.
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Bölüm 1.Demografik Özellikler

Yaş:	20-30 ☐	30-40 ☐	40-50 ☐	50-65 ☐	65-80 ☐	80-100 ☐
Kıyı topluluklarının bulunduğu yer:					
	Bafra ☐	Kumyali ☐	Kaleburnu ☐	Tatlisu ☐	
	Balalan☐	Kaplica ☐	Dipkarpaz ☐	Yenierenkoy ☐	
İkamet edilen yıl sayısı:					
Meslek:					
Medeni Durum:	Bekar☐	Evli ☐			
Cinsiyet:	Bayan ☐	Bay ☐			

Bölüm 2.

Soruları yanıtlarken kullanılacak anahtar:
Lütfen her soru için size en uygun fikri temsil eden numarayı daire içine alarak cevaplayınız
(1) Kesinlikle katılıyorum
(2) Katılıyorum
(3) Karasızım
(4) Katılmıyorum
(5) Kesinlikle katılmıyorum
Lütfen her soruyu yanıtlarken bir seçeneği daire içine alınız.

ÇEVRESEL BOYUTLAR		1	2	3	4	5
01	Burada yaşadığımdan dolayı, kıyı bölgelerindeki kalitenin kirlenme ve artıklar nedeniyle düşüşüne şahit oldum.					
02	Burada yaşadığımdan dolayı, kıyı bölgelerindeki kara erozyonuna şahit oldum.					
03	Burada yaşadığım tarihten beri erozyon olgusunun hızla değişime uğradığını fark ettim.					
04	Günümüzde plajlar ve kıyı bölgeleri daha fazla kirlenmiştir.					
05	Erozyon ve kirliliğin esas sebebi insanlardır.					
06	Erozyon ve kirliliğin esas sebebi plansız imardır.					
07	Evlerden gelen kanalizasyonun çoğu filtrelenmemiş olup denizde son bulmaktadır.					
08	Tatil evi inşaatları kıyı kirliliğine neden olmaktadır.					
09	Deniz tuzu arıtma tesisleri kıyı bölgelerinin kirlenmesine katkı koymaktadır.					
10	Mevcut marinalar, plajların korunmasına ilişkin herhangi bir yönergeye uymamaktadırlar.					
11	Mevcut konaklama sektörü kıyı kirliliğine katkı koymaktadır.					
12	İnşaat firmaları, kıyı bölgelerindeki çevrenin kalitesini korumak için katı kanun ve yönetmeliklere uymak zorundadırlar.					
13	Kıyı bölgeleri özel ekosistemlerdir ve EKBY (entegre kıyı bölgesi yönetimi) gibi uyarlanabilir bir stratejiye ihtiyaçları vardır.					
14	Kıyı bölgesi sakinleri kıyı bölgelerini koruma programlarından haberdardırlar.					
15	Kıyı bölgesi sakinleri ve toplulukları, kıyıların tahliye edilmesi ve israfa karşı nasıl korunulacağı konularında bilgi ve desteğe sahiptirler.					
KURUMSAL KONULAR						
01	Kıyı alanlarının yönetiminden hükümet sorumlu olmalıdır.					
02	Hükümetin kıyı bölgelerinin korunmasına yönelik mevcut bir programı yoktur.					
03	Yerel yönetim ile ulusal hükümet arasında kıyı yönetimi konusunda yakın bir ilişki bulunmaktadır.					
04	Kıyı bölgesi yönetimiyle ilgili katı yasa ve yönetmelikler vardır.					
05	Hükümet, kıyı bölgelerinin korunmasına ilişkin güçlü bir izleme sistemine sahiptir.					
06	Hükümet, bölge halkını entegre kıyı bölgesi yönetimine katılmaya ve dahil olmaya davet eder.					

07	Devlete bağlı olmayan sivil toplum kuruluşları (STK) kıyı bölgesi yönetiminde aktif olarak yer almaktadırlar.					
08	STK'lar ve kıyı alanından sorumlu kurumlar arasında yakın bir işbirliği ve uyum vardır.					
09	Kıyı sakinleri her zaman kıyı bölgesi yönetimi politikalarına ve planlarına katılmaya davet edilir.					
10	İnşaat müteahhitleri kıyı bölgesi geliştirme projelerini etkileme üzerinde güç sahibidirler.					
11	Kamu kurumları kıyı alanlarının korunması ve yönetilmesi için yakın bir işbirliği ve uyum içindedirler.					
12	Kıyı bölgesi sakinleri entegre kıyı bölgesi yönetimi hakkında (EKYB) bilgilendirilmişlerdir.					
13	Kuzey Kıbrıs'ta hükümet müthiş bir EKYB (entegre kıyı bölgesi yönetimi) kurmuştur.					
TURİZMİ GELİŞTİRME VE EKBY (entegre kıyı bölgesi yönetimi).						
01	Kıyı bölgeleri ve plajlar, kitle turizmi için başlıca çekim merkezleridir.					
02	Kıyı sakinleri ve toplulukları, güneş, deniz ve kum turizmi olarak bilinen kıyı turizminden esas faydalanan kişilerdir.					
03	Kuzey Kıbrıs'ta kıyı tahribatının esas sebebi turizm faaliyetleridir.					
04	Konaklama sektörü yöneticileri kıyıların nasıl korunacağına yönelik özel eğitim alırlar.					
05	Turistler, kıyı ekosistemlerine saygı göstermek amaçlı özel oryantasyon alırlar.					
06	Kıyı sakinlerine kıyı turizmi yönetimine ve gözetimine katılmak için fırsatlar sunulmaktadır.					
07	Kıyı sakinleri ve toplulukları, sürdürülebilir kıyı turizminin farkındadırlar.					
08	Turizm, denizde yaşamın ve balık stokunun azalmasına sebebiyet vermektedir.					
09	Turizm konaklamalarının gelişimi, EKYB (entegre kıyı bölgesi yönetimi) ilkelerini ihlal etmektedir.					
10	Kıyı bölgelerindeki turizmin gelişmesi, kıyı topluluklarının kültür ve yaşam şekillerine olumlu yönde etki yapmıştır.					
11	Kıyı sakinleri kıyı bölgelerindeki turizm kuruluşlarıyla yakın temas içindedirler.					
12	Kıyı sakinleri ile turizm sektörü arasında yakın bir işbirliği vardır.					

B. English

Eastern Mediterranean University,
Faculty of Tourism

Dear Sir/Madam,
This study aims to investigate the perceptions of residents who are living in communities that are in constant interaction with the coastal areas in north Cyprus. The aim is to explore the impacts of tourism and tourism related developments (e.g., second home and holiday home development) in coastal areas. Residents' perception and the level of their participation in sustainable coastal zone management is extremely important for the protection of coastal zones. Therefore, this research will contribute to the formulation of strategies for the sustainability of coastal areas for now and in the future. Please take a few moment of your time and fill out the following statements. Thank you very much for taking the time to help us with our survey.

Sincerely,

Tahereh Arefipour, PhD student.
Email: t.arefipour@yahoo.com
Phone: + 905338475706

Part 1.Demographic characteristics

Age:	20-30 ☐ 30-40 ☐ 40-50 ☐ 50-65 ☐ 65-80 ☐ 80-100 ☐
Location of coastal communities:	Bafra ☐ Kumyali ☐ Kaleburnu ☐ Tatlisu ☐ Balalan ☐ Kaplica ☐ Dipkarpaz ☐ Yenierenkoy ☐
Number of years of residence:	
Occupation: PhD Student	
Marital Status:	Single ☐ Married ☐
Gender:	Female ☐ Male ☐

Part 2.

Key for answering the questions:

Please respond by circling the number that most represents your opinion with the statement for each question.

(1) Strongly agree
(2) Agree
(3) Neutral
(4) Disagree
(5) Strongly disagree

Please circle one option when you answer each question.

ENVIRONMENTAL DIMENSIONS		SA(1)	A(2)	N(3)	D(4)	SD(5)
01	Since I have been living here, I have witnessed the decline in the quality of the coastal areas due					

	to pollution and contamination.					
02	Since I have been living here, I have witnessed land erosion along the coastal areas.					
03	I have noticed an acceleration of the phenomenon of erosion since I resided here.					
04	Nowadays beaches and coastal areas are more polluted.					
05	The main cause of erosion and pollution is humans.					
06	The main cause of pollution and erosion is haphazard development.					
07	Most of the sewer from households are unfiltered and ends in the Sea.					
08	Holiday home construction is the cause of coastal pollution.					
09	Desalination plants contribute to the pollution of coastal areas.					
10	Existing marinas are not following any guideline for protection of the beach.					
11	Existing accommodation sector contribute to coastal pollution.					
12	Construction firms have to follow strict rules and regulation to protect the quality of environment in coastal areas.					
13	Coastal areas are especial ecosystems and they require an adaptive strategy such as ICZM (integrated coastal zone management).					
14	Coastal residents are aware of coastal zone conservation programs.					
15	Coastal residents and communities have knowledge and support how to protect the coast against discharge and waste.					
INSTITUTIONAL ISSUES						
01	Government should be responsible for the management of coastal areas.					
02	Government has no program for the protection of the coastal zone.					
03	There is close relationship between local government and national government towards coastal management.					
04	There are strict laws and regulation regarding coastal zone management.					
05	Government has strong monitoring system regarding the coastal zone protection.					
06	Government facilitates and invites community residents to participate and involve in integrated coastal zone management.					
07	None governmental organizations (NGOs) are actively involved in coastal zone management.					
08	There is close cooperation and collaboration between NGOs and institutions responsible of coastal zone.					

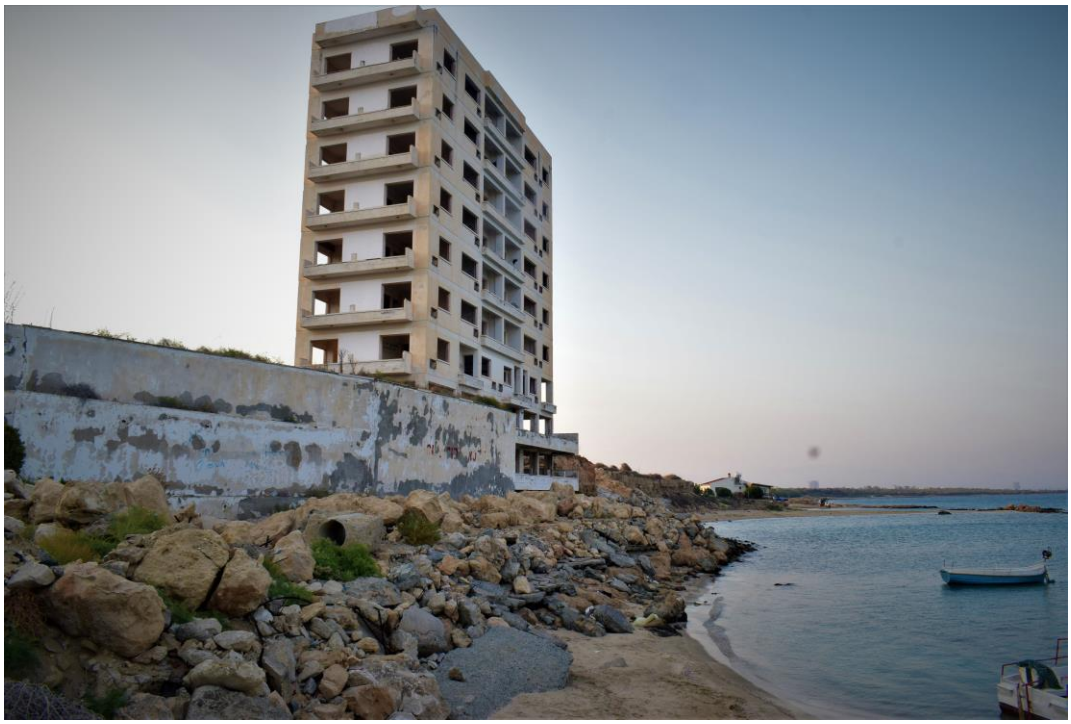
09	Coastal residents are always invited to involve in coastal zone management policies and plans.					
10	Construction developers have the power to influence coastal zone development projects.					
11	Public institutions are in close cooperation and collaboration to achieve the protection and management of coastal areas.					
12	Coastal residents have been informed about integrated coastal zone management (ICZM).					
13	Government has established a formidable ICZM (integrated coastal zone management) in north Cyprus.					
TOURISM DEVELOPMENT AND ICZM (integrated coastal zone management).						
01	Coastal zones and beaches are the main attractions for mass tourism.					
02	Coastal residents and communities are the main beneficiaries of coastal tourism known as sun, sea, and sand tourism.					
03	Tourism activities are the main cause of coastal damage in north Cyprus.					
04	Accommodation sector managers have received special training how to protect the coast.					
05	Tourists receive special orientation to respect the coastal ecosystems.					
06	Coastal residents are given opportunities to participate in coastal tourism management and monitoring.					
07	Coastal residents and communities are aware of sustainable coastal tourism.					
08	Tourism has caused the depletion of marine life and fish stock.					
09	The tourism accommodation development is in violation of the principles of ICZM (integrated coastal zone management).					
10	Tourism development along the coastal areas have affected the culture and life style of coastal communities in a positive way.					
11	Coastal residents are in close contacts with tourism establishments in the coastal areas.					
12	There is a close cooperation between coastal residents and tourism sector.					

Appendix B: Appendix pictures of pollution in coastal line of TRNC

Aksa powerplant (kalecik)
Source: by Authors,2020

Petroleum depo. Bogaz coastal zone, North Cyprus. Incompatible location for petroleum storage.
Source: by Authors,2020

Abandoned illegal development, Tatlisu coastal zone , North Cyprus
Source: by Authors, 2020



Seaside hotel, Salamis coastal zone, North Cyprus. Lack of land use planning. Consequences of absence of ICZM.
Source : by Authors, 2020

Appendix C: Scheffe Post-Hoc Analysis for the ANOVA Analysis

Table C. 1: The Scheffe Post-Hoc Analysis for ANOVA of all the Variables and Years of Residency

Dependent Variable			Mean Difference	Std. Error	Sig.	95% Confidence Interval	
						LB	UB
TIM5	1 - 10 years	11 - 20 years	0.696	0.361	0.716	-0.60	1.99
		21 -30 years	1.076	0.372	0.217	-0.25	2.41
		31 - 40 years	0.848	0.367	0.504	-0.47	2.16
		41 - 50 years	1.209	0.371	0.105	-0.12	2.54
		51 - 60 years	1.649	0.406	0.013 *	0.20	3.10
		61 and above	0.824	0.500	0.843	-0.97	2.62
	11 - 20 years	1 - 10 years	-0.696	0.361	0.716	-1.99	0.60
		21 -30 years	0.380	0.255	0.897	-0.53	1.29
		31 - 40 years	0.151	0.248	0.999	-0.74	1.04
		41 - 50 years	0.513	0.253	0.663	-0.39	1.42
		51 - 60 years	0.953	0.302	0.133	-0.13	2.04
		61 and above	0.128	0.421	1.000	-1.38	1.63
	21 -30 years	1 - 10 years	-1.076	0.372	0.217	-2.41	0.25
		11 - 20 years	-0.380	0.255	0.897	-1.29	0.53
		31 - 40 years	-0.229	0.263	0.993	-1.17	0.71
		41 - 50 years	0.133	0.268	1.000	-0.83	1.09
		51 - 60 years	0.573	0.315	0.768	-0.55	1.70
		61 and above	-0.253	0.430	0.999	-1.79	1.29
	31 - 40 years	1 - 10 years	-0.848	0.367	0.504	-2.16	0.47
		11 - 20 years	-0.151	0.248	0.999	-1.04	0.74
		21 -30 years	0.229	0.263	0.993	-0.71	1.17
		41 - 50 years	0.362	0.261	0.926	-0.57	1.30
		51 - 60 years	0.802	0.309	0.350	-0.30	1.91
		61 and above	-0.024	0.426	1.000	-1.55	1.50
	41 - 50 years	1 - 10 years	-1.209	0.371	0.105	-2.54	0.12
		11 - 20 years	-0.513	0.253	0.663	-1.42	0.39
		21 -30 years	-0.133	0.268	1.000	-1.09	0.83
		31 - 40 years	-0.362	0.261	0.926	-1.30	0.57
		51 - 60 years	0.440	0.313	0.922	-0.68	1.56

		61 and above	-0.385	0.429	0.992	-1.92	1.15
	51 - 60 years	1 - 10 years	-1.649	0.406	0.013 *	-3.10	-0.20
		11 - 20 years	-0.953	0.302	0.133	-2.04	0.13
		21 -30 years	-0.573	0.315	0.768	-1.70	0.55
		31 - 40 years	-0.802	0.309	0.350	-1.91	0.30
		41 - 50 years	-0.440	0.313	0.922	-1.56	0.68
		61 and above	-0.825	0.460	0.780	-2.47	0.82
	61 and above	1 - 10 years	-0.824	0.500	0.843	-2.62	0.97
		11 - 20 years	-0.128	0.421	1.000	-1.63	1.38
		21 -30 years	0.253	0.430	0.999	-1.29	1.79
		31 - 40 years	0.024	0.426	1.000	-1.50	1.55
		41 - 50 years	0.385	0.429	0.992	-1.15	1.92
		51 - 60 years	0.825	0.460	0.780	-0.82	2.47
TIM6	1 - 10 years	11 - 20 years	-0.709	0.340	0.628	-1.92	0.51
		21 -30 years	-0.271	0.349	0.996	-1.52	0.98
		31 - 40 years	-0.298	0.345	0.993	-1.53	0.94
		41 - 50 years	0.063	0.348	1.000	-1.18	1.31
		51 - 60 years	0.447	0.381	0.967	-0.92	1.81
		61 and above	-0.392	0.470	0.994	-2.07	1.29
	11 - 20 years	1 - 10 years	0.709	0.340	0.628	-0.51	1.92
		21 -30 years	0.439	0.239	0.762	-0.42	1.30
		31 - 40 years	0.412	0.233	0.791	-0.42	1.24
		41 - 50 years	0.772	0.238	0.109	-0.08	1.62
		51 - 60 years	1.157	0.284	0.013 *	0.14	2.17
		61 and above	0.317	0.395	0.996	-1.10	1.73
	21 -30 years	1 - 10 years	0.271	0.349	0.996	-0.98	1.52
		11 - 20 years	-0.439	0.239	0.762	-1.30	0.42
		31 - 40 years	-0.027	0.247	1.000	-0.91	0.86
		41 - 50 years	0.333	0.252	0.940	-0.57	1.23
		51 - 60 years	0.718	0.296	0.437	-0.34	1.78
		61 and above	-0.121	0.404	1.000	-1.57	1.32
	31 - 40 years	1 - 10 years	0.298	0.345	0.993	-0.94	1.53
		11 - 20 years	-0.412	0.233	0.791	-1.24	0.42
		21 -30 years	0.027	0.247	1.000	-0.86	0.91
		41 - 50 years	0.360	0.245	0.904	-0.52	1.24
		51 - 60 years	0.745	0.290	0.364	-0.29	1.78

		61 and above	-0.095	0.400	1.000	-1.53	1.34
	41 - 50 years	1 - 10 years	-0.063	0.348	1.000	-1.31	1.18
		11 - 20 years	-0.772	0.238	0.109	-1.62	0.08
		21 -30 years	-0.333	0.252	0.940	-1.23	0.57
		31 - 40 years	-0.360	0.245	0.904	-1.24	0.52
		51 - 60 years	0.385	0.294	0.944	-0.67	1.44
		61 and above	-0.455	0.403	0.973	-1.90	0.99
	51 - 60 years	1 - 10 years	-0.447	0.381	0.967	-1.81	0.92
		11 - 20 years	-1.157	0.284	0.013 *	-2.17	-0.14
		21 -30 years	-0.718	0.296	0.437	-1.78	0.34
		31 - 40 years	-0.745	0.290	0.364	-1.78	0.29
		41 - 50 years	-0.385	0.294	0.944	-1.44	0.67
		61 and above	-0.839	0.432	0.706	-2.38	0.71
	61 and above	1 - 10 years	0.392	0.470	0.994	-1.29	2.07
		11 - 20 years	-0.317	0.395	0.996	-1.73	1.10
		21 -30 years	0.121	0.404	1.000	-1.32	1.57
		31 - 40 years	0.095	0.400	1.000	-1.34	1.53
		41 - 50 years	0.455	0.403	0.973	-0.99	1.90
		51 - 60 years	0.839	0.432	0.706	-0.71	2.38

Note: Std. Error = Standard Error; Sig. = Significance; LB = Lower Bound; UB = Upper Bound; * = $p \leq 0.05$ level.

Table C.2: The Scheffe Post-Hoc Analysis for ANOVA of all the Variables and Occupation

Dependent Variable			Mean Difference	Std. Error	Sig.	95% Confidence Interval	
						LB	UB
ED11	Self- employee	Governmental job	0.154	0.167	0.653	-0.26	0.56
		Unemployed	-0.444	0.217	0.125	-0.98	0.09
	Governmental job	Self- employee	-0.154	0.167	0.653	-0.56	0.26
		Unemployed	-0.598	0.202	0.014 *	-1.10	-0.10
	Unemployed	Self- employee	0.444	0.217	0.125	-0.09	0.98
		Governmental job	0.598	0.202	0.014 *	0.10	1.10
II6	Self- employee	Governmental job	-0.352	0.171	0.123	-0.77	0.07
		Unemployed	-0.560	0.223	0.045 *	-1.11	-0.01
	Governmental job	Self- employee	0.352	0.171	0.123	-0.07	0.77
		Unemployed	-0.208	0.208	0.607	-0.72	0.30

	Unemployed	Self- employee	0.560	0.223	0.045 *	0.01	1.11
		Governmental job	0.208	0.208	0.607	-0.30	0.72

Note: Std. Error = Standard Error; Sig. = Significance; LB = Lower Bound; UB = Upper Bound; * = $p \leq 0.05$ level; ** = $p \leq 0.01$ level. [1], [2], and [3] represent the mean score of Self-employed, Governmental job, and Unemployed, respectively.

Table C.3: The Scheffe Post-Hoc Analysis for ANOVA of all the Variables and Location

Dependent Variable			Mean Difference	Std. Error	Sig.	95% Confidence Interval	
						LB	UB
II7	Bafra	Kumyali	-0.269	0.338	0.999	-1.55	1.01
		Kaleburnu	0.802	0.329	0.547	-0.44	2.05
		Tatlisu	0.165	0.324	1.000	-1.06	1.39
		Balalan	0.275	0.335	0.998	-0.99	1.54
		Kaplica	-0.259	0.353	0.999	-1.59	1.08
		Dipkarpaz	1.059	0.301	0.095	-0.08	2.20
		Yenierenkoy	0.706	0.299	0.591	-0.43	1.84
	Kumyali	Bafra	0.269	0.338	0.999	-1.01	1.55
		Kaleburnu	1.072	0.329	0.162	-0.17	2.32
		Tatlisu	0.434	0.324	0.970	-0.79	1.66
		Balalan	0.544	0.335	0.915	-0.72	1.81
		Kaplica	0.010	0.353	1.000	-1.32	1.35
		Dipkarpaz	1.329	0.301	0.008 **	0.19	2.47
		Yenierenkoy	0.975	0.299	0.161	-0.16	2.11
	Kaleburnu	Bafra	-0.802	0.329	0.547	-2.05	0.44
		Kumyali	-1.072	0.329	0.162	-2.32	0.17
		Tatlisu	-0.637	0.315	0.767	-1.83	0.55
		Balalan	-0.527	0.326	0.917	-1.76	0.71
		Kaplica	-1.061	0.344	0.224	-2.36	0.24
		Dipkarpaz	0.257	0.291	0.998	-0.85	1.36
		Yenierenkoy	-0.097	0.289	1.000	-1.19	1.00
	Tatlisu	Bafra	-0.165	0.324	1.000	-1.39	1.06
		Kumyali	-0.434	0.324	0.970	-1.66	0.79
		Kaleburnu	0.637	0.315	0.767	-0.55	1.83
		Balalan	0.110	0.321	1.000	-1.10	1.32

		Kaplica	-0.424	0.339	0.980	-1.71	0.86
		Dipkarpaz	0.894	0.286	0.205	-0.19	1.98
		Yenierenkoy	0.541	0.283	0.818	-0.53	1.61
	Balalan	Bafra	-0.275	0.335	0.998	-1.54	0.99
		Kumyali	-0.544	0.335	0.915	-1.81	0.72
		Kaleburnu	0.527	0.326	0.917	-0.71	1.76
		Tatlisu	-0.110	0.321	1.000	-1.32	1.10
		Kaplica	-0.534	0.350	0.939	-1.86	0.79
		Dipkarpaz	0.785	0.298	0.438	-0.34	1.91
		Yenierenkoy	0.431	0.295	0.952	-0.69	1.55
	Kaplica	Bafra	0.259	0.353	0.999	-1.08	1.59
		Kumyali	-0.010	0.353	1.000	-1.35	1.32
		Kaleburnu	1.061	0.344	0.224	-0.24	2.36
		Tatlisu	0.424	0.339	0.980	-0.86	1.71
		Balalan	0.534	0.350	0.939	-0.79	1.86
		Dipkarpaz	1.318	0.318	0.019 *	0.11	2.52
		Yenierenkoy	0.964	0.316	0.235	-0.23	2.16
	Dipkarpaz	Bafra	-1.059	0.301	0.095	-2.20	0.08
		Kumyali	-1.329	0.301	0.008 **	-2.47	-0.19
		Kaleburnu	-0.257	0.291	0.998	-1.36	0.85
		Tatlisu	-0.894	0.286	0.205	-1.98	0.19
		Balalan	-0.785	0.298	0.438	-1.91	0.34
		Kaplica	-1.318	0.318	0.019 *	-2.52	-0.11
		Yenierenkoy	-0.354	0.257	0.965	-1.33	0.62
	Yenierenkoy	Bafra	-0.706	0.299	0.591	-1.84	0.43
		Kumyali	-0.975	0.299	0.161	-2.11	0.16
		Kaleburnu	0.097	0.289	1.000	-1.00	1.19
		Tatlisu	-0.541	0.283	0.818	-1.61	0.53
		Balalan	-0.431	0.295	0.952	-1.55	0.69
		Kaplica	-0.964	0.316	0.235	-2.16	0.23
		Dipkarpaz	0.354	0.257	0.965	-0.62	1.33
II9	Bafra	Kumyali	-0.385	0.330	0.987	-1.64	0.87
		Kaleburnu	0.541	0.322	0.899	-0.68	1.76
		Tatlisu	-0.221	0.317	0.999	-1.42	0.98
		Balalan	0.046	0.327	1.000	-1.19	1.28
		Kaplica	-0.042	0.345	1.000	-1.35	1.26

	Dipkarpaz	0.890	0.295	0.250	-0.23	2.01
	Yenierenkoy	0.231	0.292	0.999	-0.88	1.34
Kumyali	Bafra	0.385	0.330	0.987	-0.87	1.64
	Kaleburnu	0.926	0.322	0.314	-0.29	2.14
	Tatlisu	0.164	0.317	1.000	-1.04	1.36
	Balalan	0.430	0.327	0.973	-0.81	1.67
	Kaplica	0.343	0.345	0.995	-0.96	1.65
	Dipkarpaz	1.274	0.295	0.011 *	0.16	2.39
	Yenierenkoy	0.615	0.292	0.728	-0.49	1.72
Kaleburnu	Bafra	-0.541	0.322	0.899	-1.76	0.68
	Kumyali	-0.926	0.322	0.314	-2.14	0.29
	Tatlisu	-0.762	0.308	0.527	-1.93	0.40
	Balalan	-0.496	0.319	0.932	-1.70	0.71
	Kaplica	-0.583	0.337	0.884	-1.86	0.69
	Dipkarpaz	0.349	0.285	0.982	-0.73	1.43
	Yenierenkoy	-0.310	0.283	0.991	-1.38	0.76
Tatlisu	Bafra	0.221	0.317	0.999	-0.98	1.42
	Kumyali	-0.164	0.317	1.000	-1.36	1.04
	Kaleburnu	0.762	0.308	0.527	-0.40	1.93
	Balalan	0.266	0.314	0.998	-0.92	1.45
	Kaplica	0.179	0.332	1.000	-1.08	1.44
	Dipkarpaz	1.111	0.279	0.030 *	0.05	2.17
	Yenierenkoy	0.452	0.277	0.913	-0.60	1.50
Balalan	Bafra	-0.046	0.327	1.000	-1.28	1.19
	Kumyali	-0.430	0.327	0.973	-1.67	0.81
	Kaleburnu	0.496	0.319	0.932	-0.71	1.70
	Tatlisu	-0.266	0.314	0.998	-1.45	0.92
	Kaplica	-0.088	0.342	1.000	-1.38	1.21
	Dipkarpaz	0.844	0.291	0.303	-0.26	1.95
	Yenierenkoy	0.185	0.289	1.000	-0.91	1.28
Kaplica	Bafra	0.042	0.345	1.000	-1.26	1.35
	Kumyali	-0.343	0.345	0.995	-1.65	0.96
	Kaleburnu	0.583	0.337	0.884	-0.69	1.86
	Tatlisu	-0.179	0.332	1.000	-1.44	1.08
	Balalan	0.088	0.342	1.000	-1.21	1.38
	Dipkarpaz	0.932	0.311	0.260	-0.25	2.11

		Yenierenkoy	0.273	0.309	0.998	-0.90	1.44
	Dipkarpaz	Bafra	-0.890	0.295	0.250	-2.01	0.23
		Kumyali	-1.274	0.295	0.011 *	-2.39	-0.16
		Kaleburnu	-0.349	0.285	0.982	-1.43	0.73
		Tatlisu	-1.111	0.279	0.030 *	-2.17	-0.05
		Balalan	-0.844	0.291	0.303	-1.95	0.26
		Kaplica	-0.932	0.311	0.260	-2.11	0.25
		Yenierenkoy	-0.659	0.251	0.444	-1.61	0.29
	Yenierenkoy	Bafra	-0.231	0.292	0.999	-1.34	0.88
		Kumyali	-0.615	0.292	0.728	-1.72	0.49
		Kaleburnu	0.310	0.283	0.991	-0.76	1.38
		Tatlisu	-0.452	0.277	0.913	-1.50	0.60
		Balalan	-0.185	0.289	1.000	-1.28	0.91
		Kaplica	-0.273	0.309	0.998	-1.44	0.90
		Dipkarpaz	0.659	0.251	0.444	-0.29	1.61
II11	Bafra	Kumyali	-0.269	0.373	0.999	-1.68	1.14
		Kaleburnu	-0.102	0.364	1.000	-1.48	1.27
		Tatlisu	-0.138	0.358	1.000	-1.49	1.22
		Balalan	-0.691	0.370	0.835	-2.09	0.71
		Kaplica	-1.017	0.390	0.452	-2.49	0.46
		Dipkarpaz	0.460	0.333	0.964	-0.80	1.72
		Yenierenkoy	-0.263	0.330	0.999	-1.51	0.99
	Kumyali	Bafra	0.269	0.373	0.999	-1.14	1.68
		Kaleburnu	0.167	0.364	1.000	-1.21	1.54
		Tatlisu	0.132	0.358	1.000	-1.22	1.49
		Balalan	-0.422	0.370	0.988	-1.82	0.98
		Kaplica	-0.748	0.390	0.815	-2.22	0.73
		Dipkarpaz	0.729	0.333	0.685	-0.53	1.99
		Yenierenkoy	0.007	0.330	1.000	-1.24	1.26
	Kaleburnu	Bafra	0.102	0.364	1.000	-1.27	1.48
		Kumyali	-0.167	0.364	1.000	-1.54	1.21
		Tatlisu	-0.036	0.348	1.000	-1.35	1.28
		Balalan	-0.589	0.360	0.912	-1.95	0.77
		Kaplica	-0.915	0.381	0.566	-2.36	0.53
		Dipkarpaz	0.562	0.322	0.880	-0.66	1.78
		Yenierenkoy	-0.160	0.319	1.000	-1.37	1.05

	Tatlisu	Bafra	0.138	0.358	1.000	-1.22	1.49
		Kumyali	-0.132	0.358	1.000	-1.49	1.22
		Kaleburnu	0.036	0.348	1.000	-1.28	1.35
		Balalan	-0.553	0.354	0.931	-1.89	0.79
		Kaplica	-0.880	0.375	0.600	-2.30	0.54
		Dipkarpaz	0.598	0.316	0.825	-0.60	1.79
		Yenierenkoy	-0.125	0.313	1.000	-1.31	1.06
	Balalan	Bafra	0.691	0.370	0.835	-0.71	2.09
		Kumyali	0.422	0.370	0.988	-0.98	1.82
		Kaleburnu	0.589	0.360	0.912	-0.77	1.95
		Tatlisu	0.553	0.354	0.931	-0.79	1.89
		Kaplica	-0.327	0.387	0.998	-1.79	1.14
		Dipkarpaz	1.151	0.329	0.099	-0.10	2.40
		Yenierenkoy	0.428	0.326	0.973	-0.81	1.66
	Kaplica	Bafra	1.017	0.390	0.452	-0.46	2.49
		Kumyali	0.748	0.390	0.815	-0.73	2.22
		Kaleburnu	0.915	0.381	0.566	-0.53	2.36
		Tatlisu	0.880	0.375	0.600	-0.54	2.30
		Balalan	0.327	0.387	0.998	-1.14	1.79
		Dipkarpaz	1.477	0.352	0.016 *	0.15	2.81
		Yenierenkoy	0.755	0.349	0.699	-0.57	2.08
	Dipkarpaz	Bafra	-0.460	0.333	0.964	-1.72	0.80
		Kumyali	-0.729	0.333	0.685	-1.99	0.53
		Kaleburnu	-0.562	0.322	0.880	-1.78	0.66
		Tatlisu	-0.598	0.316	0.825	-1.79	0.60
		Balalan	-1.151	0.329	0.099	-2.40	0.10
		Kaplica	-1.477	0.352	0.016 *	-2.81	-0.15
		Yenierenkoy	-0.722	0.284	0.488	-1.80	0.35
	Yenierenkoy	Bafra	0.263	0.330	0.999	-0.99	1.51
		Kumyali	-0.007	0.330	1.000	-1.26	1.24
		Kaleburnu	0.160	0.319	1.000	-1.05	1.37
		Tatlisu	0.125	0.313	1.000	-1.06	1.31
		Balalan	-0.428	0.326	0.973	-1.66	0.81
		Kaplica	-0.755	0.349	0.699	-2.08	0.57
		Dipkarpaz	0.722	0.284	0.488	-0.35	1.80
TIM3	Bafra	Kumyali	-0.962	0.353	0.390	-2.30	0.38

	Kaleburnu	-0.251	0.344	0.999	-1.55	1.05
	Tatlisu	-0.326	0.339	0.996	-1.61	0.96
	Balalan	-0.645	0.350	0.844	-1.97	0.68
	Kaplica	-0.969	0.369	0.442	-2.36	0.43
	Dipkarpaz	0.327	0.315	0.993	-0.87	1.52
	Yenierenkoy	-0.206	0.312	1.000	-1.39	0.98
Kumyali	Bafra	0.962	0.353	0.390	-0.38	2.30
	Kaleburnu	0.711	0.344	0.747	-0.59	2.01
	Tatlisu	0.635	0.339	0.832	-0.65	1.92
	Balalan	0.316	0.350	0.997	-1.01	1.64
	Kaplica	-0.007	0.369	1.000	-1.40	1.39
	Dipkarpaz	1.288	0.315	0.022 *	0.10	2.48
	Yenierenkoy	0.756	0.312	0.558	-0.43	1.94
Kaleburnu	Bafra	0.251	0.344	0.999	-1.05	1.55
	Kumyali	-0.711	0.344	0.747	-2.01	0.59
	Tatlisu	-0.076	0.329	1.000	-1.32	1.17
	Balalan	-0.395	0.340	0.987	-1.68	0.89
	Kaplica	-0.718	0.360	0.781	-2.08	0.64
	Dipkarpaz	0.578	0.305	0.824	-0.58	1.73
	Yenierenkoy	0.045	0.302	1.000	-1.10	1.19
Tatlisu	Bafra	0.326	0.339	0.996	-0.96	1.61
	Kumyali	-0.635	0.339	0.832	-1.92	0.65
	Kaleburnu	0.076	0.329	1.000	-1.17	1.32
	Balalan	-0.319	0.335	0.996	-1.59	0.95
	Kaplica	-0.642	0.355	0.857	-1.99	0.70
	Dipkarpaz	0.653	0.299	0.686	-0.48	1.78
	Yenierenkoy	0.121	0.296	1.000	-1.00	1.24
Balalan	Bafra	0.645	0.350	0.844	-0.68	1.97
	Kumyali	-0.316	0.350	0.997	-1.64	1.01
	Kaleburnu	0.395	0.340	0.987	-0.89	1.68
	Tatlisu	0.319	0.335	0.996	-0.95	1.59
	Kaplica	-0.323	0.366	0.998	-1.71	1.06
	Dipkarpaz	0.972	0.311	0.208	-0.21	2.15
	Yenierenkoy	0.440	0.309	0.958	-0.73	1.61
Kaplica	Bafra	0.969	0.369	0.442	-0.43	2.36
	Kumyali	0.007	0.369	1.000	-1.39	1.40

		Kaleburnu	0.718	0.360	0.781	-0.64	2.08
		Tatlisu	0.642	0.355	0.857	-0.70	1.99
		Balalan	0.323	0.366	0.998	-1.06	1.71
		Dipkarpaz	1.295*	0.332	0.038 *	0.04	2.55
		Yenierenkoy	0.763	0.330	0.619	-0.49	2.01
	Dipkarpaz	Bafra	-0.327	0.315	0.993	-1.52	0.87
		Kumyali	-1.288	0.315	0.022 *	-2.48	-0.10
		Kaleburnu	-0.578	0.305	0.824	-1.73	0.58
		Tatlisu	-0.653	0.299	0.686	-1.78	0.48
		Balalan	-0.972	0.311	0.208	-2.15	0.21
		Kaplica	-1.295	0.332	0.038 *	-2.55	-0.04
		Yenierenkoy	-0.533	0.268	0.786	-1.55	0.48
	Yenierenkoy	Bafra	0.206	0.312	1.000	-0.98	1.39
		Kumyali	-0.756	0.312	0.558	-1.94	0.43
		Kaleburnu	-0.045	0.302	1.000	-1.19	1.10
		Tatlisu	-0.121	0.296	1.000	-1.24	1.00
		Balalan	-0.440	0.309	0.958	-1.61	0.73
		Kaplica	-0.763	0.330	0.619	-2.01	0.49
		Dipkarpaz	0.533	0.268	0.786	-0.48	1.55
TIM4	Bafra	Kumyali	-0.385	0.373	0.994	-1.80	1.03
		Kaleburnu	-0.310	0.364	0.998	-1.69	1.07
		Tatlisu	-0.226	0.358	1.000	-1.58	1.13
		Balalan	-0.630	0.370	0.893	-2.03	0.77
		Kaplica	-0.273	0.390	0.999	-1.75	1.20
		Dipkarpaz	0.682	0.333	0.757	-0.58	1.94
		Yenierenkoy	-0.348	0.330	0.993	-1.60	0.90
	Kumyali	Bafra	0.385	0.373	0.994	-1.03	1.80
		Kaleburnu	0.074	0.364	1.000	-1.30	1.45
		Tatlisu	0.159	0.358	1.000	-1.20	1.51
		Balalan	-0.245	0.370	1.000	-1.65	1.16
		Kaplica	0.112	0.390	1.000	-1.36	1.59
		Dipkarpaz	1.066	0.333	0.180	-0.19	2.33
		Yenierenkoy	0.037	0.330	1.000	-1.21	1.29
	Kaleburnu	Bafra	0.310	0.364	0.998	-1.07	1.69
		Kumyali	-0.074	0.364	1.000	-1.45	1.30
		Tatlisu	0.085	0.348	1.000	-1.23	1.40

	Balalan	-0.319	0.360	0.998	-1.68	1.04
	Kaplica	0.038	0.381	1.000	-1.40	1.48
	Dipkarpaz	0.992	0.322	0.225	-0.23	2.21
	Yenierenkoy	-0.037	0.319	1.000	-1.25	1.17
Tatlisu	Bafra	0.226	0.358	1.000	-1.13	1.58
	Kumyali	-0.159	0.358	1.000	-1.51	1.20
	Kaleburnu	-0.085	0.348	1.000	-1.40	1.23
	Balalan	-0.404	0.354	0.988	-1.75	0.94
	Kaplica	-0.047	0.375	1.000	-1.47	1.37
	Dipkarpaz	0.908	0.316	0.314	-0.29	2.10
	Yenierenkoy	-0.122	0.313	1.000	-1.31	1.06
Balalan	Bafra	0.630	0.370	0.893	-0.77	2.03
	Kumyali	0.245	0.370	1.000	-1.16	1.65
	Kaleburnu	0.319	0.360	0.998	-1.04	1.68
	Tatlisu	0.404	0.354	0.988	-0.94	1.75
	Kaplica	0.357	0.387	0.997	-1.11	1.82
	Dipkarpaz	1.311	0.329	0.030 *	0.07	2.56
	Yenierenkoy	0.282	0.326	0.998	-0.95	1.52
Kaplica	Bafra	0.273	0.390	0.999	-1.20	1.75
	Kumyali	-0.112	0.390	1.000	-1.59	1.36
	Kaleburnu	-0.038	0.381	1.000	-1.48	1.40
	Tatlisu	0.047	0.375	1.000	-1.37	1.47
	Balalan	-0.357	0.387	0.997	-1.82	1.11
	Dipkarpaz	0.955	0.352	0.395	-0.38	2.29
	Yenierenkoy	-0.075	0.349	1.000	-1.40	1.25
Dipkarpaz	Bafra	-0.682	0.333	0.757	-1.94	0.58
	Kumyali	-1.066	0.333	0.180	-2.33	0.19
	Kaleburnu	-0.992	0.322	0.225	-2.21	0.23
	Tatlisu	-0.908	0.316	0.314	-2.10	0.29
	Balalan	-1.311	0.329	0.030 *	-2.56	-0.07
	Kaplica	-0.955	0.352	0.395	-2.29	0.38
	Yenierenkoy	-1.030	0.284	0.074	-2.10	0.05
Yenierenkoy	Bafra	0.348	0.330	0.993	-0.90	1.60
	Kumyali	-0.037	0.330	1.000	-1.29	1.21
	Kaleburnu	0.037	0.319	1.000	-1.17	1.25
	Tatlisu	0.122	0.313	1.000	-1.06	1.31

		Balalan	-0.282	0.326	0.998	-1.52	0.95
		Kaplica	0.075	0.349	1.000	-1.25	1.40
		Dipkarpaz	1.030	0.284	0.074	-0.05	2.10
TIM6	Bafra	Kumyali	0.000	0.330	1.000	-1.25	1.25
		Kaleburnu	-0.256	0.321	0.999	-1.47	0.96
		Tatlisu	-0.163	0.316	1.000	-1.36	1.04
		Balalan	-0.623	0.327	0.821	-1.86	0.62
		Kaplica	-0.353	0.345	0.994	-1.66	0.95
		Dipkarpaz	0.647	0.294	0.681	-0.47	1.76
		Yenierenkoy	-0.351	0.292	0.984	-1.46	0.75
	Kumyali	Bafra	0.000	0.330	1.000	-1.25	1.25
		Kaleburnu	-0.256	0.321	0.999	-1.47	0.96
		Tatlisu	-0.163	0.316	1.000	-1.36	1.04
		Balalan	-0.623	0.327	0.821	-1.86	0.62
		Kaplica	-0.353	0.345	0.994	-1.66	0.95
		Dipkarpaz	0.647	0.294	0.681	-0.47	1.76
		Yenierenkoy	-0.351	0.292	0.984	-1.46	0.75
	Kaleburnu	Bafra	0.256	0.321	0.999	-0.96	1.47
		Kumyali	0.256	0.321	0.999	-0.96	1.47
		Tatlisu	0.093	0.307	1.000	-1.07	1.26
		Balalan	-0.367	0.318	0.987	-1.57	0.84
		Kaplica	-0.097	0.336	1.000	-1.37	1.18
		Dipkarpaz	0.903	0.285	0.191	-0.17	1.98
		Yenierenkoy	-0.095	0.282	1.000	-1.16	0.97
	Tatlisu	Bafra	0.163	0.316	1.000	-1.04	1.36
		Kumyali	0.163	0.316	1.000	-1.04	1.36
		Kaleburnu	-0.093	0.307	1.000	-1.26	1.07
		Balalan	-0.460	0.313	0.950	-1.65	0.73
		Kaplica	-0.191	0.332	1.000	-1.45	1.07
		Dipkarpaz	0.809	0.279	0.302	-0.25	1.87
		Yenierenkoy	-0.189	0.277	1.000	-1.24	0.86
	Balalan	Bafra	0.623	0.327	0.821	-0.62	1.86
		Kumyali	0.623	0.327	0.821	-0.62	1.86
		Kaleburnu	0.367	0.318	0.987	-0.84	1.57
		Tatlisu	0.460	0.313	0.950	-0.73	1.65
		Kaplica	0.269	0.342	0.999	-1.02	1.56

		Dipkarpaz	1.269	0.291	0.010 *	0.17	2.37
		Yenierenkoy	0.271	0.289	0.996	-0.82	1.36
	Kaplica	Bafra	0.353	0.345	0.994	-0.95	1.66
		Kumyali	0.353	0.345	0.994	-0.95	1.66
		Kaleburnu	0.097	0.336	1.000	-1.18	1.37
		Tatlisu	0.191	0.332	1.000	-1.07	1.45
		Balalan	-0.269	0.342	0.999	-1.56	1.02
		Dipkarpaz	1.000	0.311	0.175	-0.18	2.18
		Yenierenkoy	0.002	0.309	1.000	-1.17	1.17
	Dipkarpaz	Bafra	-0.647	0.294	0.681	-1.76	0.47
		Kumyali	-0.647	0.294	0.681	-1.76	0.47
		Kaleburnu	-0.903	0.285	0.191	-1.98	0.17
		Tatlisu	-0.809	0.279	0.302	-1.87	0.25
		Balalan	-1.269	0.291	0.010 *	-2.37	-0.17
		Kaplica	-1.000	0.311	0.175	-2.18	0.18
		Yenierenkoy	-0.998	0.251	0.030 *	-1.95	-0.05
	Yenierenkoy	Bafra	0.351	0.292	0.984	-0.75	1.46
		Kumyali	0.351	0.292	0.984	-0.75	1.46
		Kaleburnu	0.095	0.282	1.000	-0.97	1.16
		Tatlisu	0.189	0.277	1.000	-0.86	1.24
		Balalan	-0.271	0.289	0.996	-1.36	0.82
		Kaplica	-0.002	0.309	1.000	-1.17	1.17
		Dipkarpaz	0.998	0.251	0.030 *	0.05	1.95
TIM7	Bafra	Kumyali	0.038	0.318	1.000	-1.16	1.24
		Kaleburnu	-0.354	0.310	0.988	-1.53	0.82
		Tatlisu	-0.391	0.305	0.976	-1.54	0.76
		Balalan	-0.868	0.315	0.374	-2.06	0.32
		Kaplica	0.668	0.332	0.773	-0.59	1.92
		Dipkarpaz	0.168	0.283	1.000	-0.91	1.24
		Yenierenkoy	-0.662	0.281	0.594	-1.73	0.40
	Kumyali	Bafra	-0.038	0.318	1.000	-1.24	1.16
		Kaleburnu	-0.393	0.310	0.978	-1.56	0.78
		Tatlisu	-0.429	0.305	0.960	-1.58	0.72
		Balalan	-0.906	0.315	0.313	-2.10	0.29
		Kaplica	0.629	0.332	0.824	-0.63	1.89
		Dipkarpaz	0.129	0.283	1.000	-0.94	1.20

	Yenierenkoy	-0.701	0.281	0.517	-1.77	0.36
Kaleburnu	Bafra	0.354	0.310	0.988	-0.82	1.53
	Kumyali	0.393	0.310	0.978	-0.78	1.56
	Tatlisu	-0.037	0.296	1.000	-1.16	1.08
	Balalan	-0.513	0.306	0.901	-1.67	0.65
	Kaplica	1.022	0.324	0.197	-0.20	2.25
	Dipkarpaz	0.522	0.274	0.821	-0.52	1.56
	Yenierenkoy	-0.308	0.272	0.989	-1.34	0.72
Tatlisu	Bafra	0.391	0.305	0.976	-0.76	1.54
	Kumyali	0.429	0.305	0.960	-0.72	1.58
	Kaleburnu	0.037	0.296	1.000	-1.08	1.16
	Balalan	-0.477	0.302	0.926	-1.62	0.67
	Kaplica	1.059	0.319	0.145	-0.15	2.27
	Dipkarpaz	0.559	0.269	0.741	-0.46	1.58
	Yenierenkoy	-0.271	0.266	0.994	-1.28	0.74
Balalan	Bafra	0.868	0.315	0.374	-0.32	2.06
	Kumyali	0.906	0.315	0.313	-0.29	2.10
	Kaleburnu	0.513	0.306	0.901	-0.65	1.67
	Tatlisu	0.477	0.302	0.926	-0.67	1.62
	Kaplica	1.535	0.329	0.004 **	0.29	2.78
	Dipkarpaz	1.035	0.280	0.062	-0.03	2.10
	Yenierenkoy	0.205	0.278	0.999	-0.85	1.26
Kaplica	Bafra	-0.668	0.332	0.773	-1.92	0.59
	Kumyali	-0.629	0.332	0.824	-1.89	0.63
	Kaleburnu	-1.022	0.324	0.197	-2.25	0.20
	Tatlisu	-1.059	0.319	0.145	-2.27	0.15
	Balalan	-1.535	0.329	0.004 **	-2.78	-0.29
	Dipkarpaz	-0.500	0.299	0.902	-1.63	0.63
	Yenierenkoy	-1.330	0.297	0.007 **	-2.45	-0.21
Dipkarpaz	Bafra	-0.168	0.283	1.000	-1.24	0.91
	Kumyali	-0.129	0.283	1.000	-1.20	0.94
	Kaleburnu	-0.522	0.274	0.821	-1.56	0.52
	Tatlisu	-0.559	0.269	0.741	-1.58	0.46
	Balalan	-1.035	0.280	0.062	-2.10	0.03
	Kaplica	0.500	0.299	0.902	-0.63	1.63
	Yenierenkoy	-0.830	0.242	0.113	-1.74	0.08

Yenierenkoy	Bafra	0.662	0.281	0.594	-0.40	1.73
	Kumyali	0.701	0.281	0.517	-0.36	1.77
	Kaleburnu	0.308	0.272	0.989	-0.72	1.34
	Tatlisu	0.271	0.266	0.994	-0.74	1.28
	Balalan	-0.205	0.278	0.999	-1.26	0.85
	Kaplica	1.330	0.297	0.007 **	0.21	2.45
	Dipkarpaz	0.830	0.242	0.113	-0.08	1.74

Note: Std. Error = Standard Error; Sig. = Significance; LB = Lower Bound; UB = Upper Bound; * = $p \leq 0.05$ level; ** = $p \leq 0.01$ level.